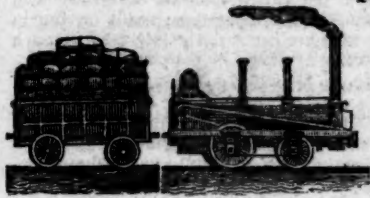
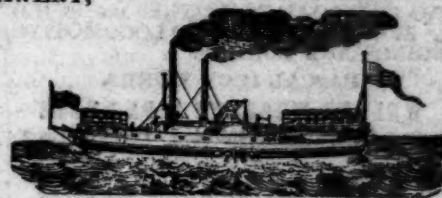


AMERICAN RAILROAD JOURNAL, AND GENERAL ADVERTISER

FOR RAILROADS, CANALS, STEAMBOATS, MACHINERY,
AND MINES.



ESTABLISHED 1831.



PUBLISHED WEEKLY, AT No. 23 CHAMBERS STREET, NEW YORK, AT THREE DOLLARS PER ANNUM.

SECOND QUARTO SERIES, VOL. I., No. 23.]

THURSDAY, JUNE 5, 1845.

[WHOLE No. 466, VOL. XVIII.]

THE AMERICAN RAILROAD JOURNAL is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

RATES OF ADVERTISING.

One page per annum.....	\$125 00
One column ".....	50 00
One square ".....	15 00
One page per month.....	20 00
One column ".....	8 00
One square ".....	2 50
One page, single insertion.....	8 00
One column ".....	3 00
One square ".....	1 00
Professional notices per annum.....	5 00

ENGINEERS and MACHINISTS.

STILLMAN, ALLEN & Co. N. Y.
JAS. P. ALLAIRE, N. Y.
H. R. DUNHAM & Co. N. Y.
WEST POINT FOUNDRY, N. Y.
PHENIX FOUNDRY, N. Y.
R. HOE & Co. N. Y.
J. F. WINSLOW, Albany Iron and Nail Works, Troy, N. Y. (See Adv.)
TROY IRON AND NAIL FACTORY, H. Burden Agent. (See Adv.)
ANDREW MENEELY, West Troy. (See Adv.)
ROGERS, KETCHUM & GROSVENOR, Paterson, N. J. (See Adv.)
S. VAIL, Speedwell Iron Works, near Morristown, N. J. (See Adv.)
NORRIS, BROTHERS, Philadelphia, Pa.
KITE'S Patent Safety Beam. (See Adv.)
FRENCH & BAIRD, Philadelphia, Pa. (See Adv.)
BALDWIN & WHITNEY, Philadelphia, Pa.
JOHN F. STARR, Philadelphia, Pa.
MERRICK & TOWNE, do.
NEWCASTLE MANUFACTURING COMPANY, Newcastle, Del. (See Adv.)
ROSS WINANS, Baltimore, Md.
CYRUS ALGER & CO., South Boston Iron Company.
SETH ADAMS, Engineer, South Boston, Mass.
HINKLEY & DRURY, Boston.
C. C. ALGER, [Stockbridge Iron Works,] Stockbridge, Mass.

IRON MERCHANTS and IMPORTERS.

DAVIS, BROOKS, & Co. N. Y. [See Adv.]
A. & G. RALSTON & Co. Philad. Pa. [See Adv.]
THOMAS & EDMUND GEORGE, Philadelphia. [See Adv.]

KITE'S PATENT SAFETY BEAM.

MESSRS. EDITORS.—As your Journal is devoted to the benefit of the public in general I feel desirous to communicate to you for publication the following circumstance of no inconsiderable importance, which occurred some few days since on the Philadelphia, Wilmington and Baltimore railroad.

On the passage of the evening train of cars from Philadelphia to this city, an axle of our large 8 wheeled passenger car was broken, but from the particular plan of the construction, the accident was entirely unknown to any of the passengers, or, in fact, to the conductor himself, until the train, (as was supposed from some circumstances attending the case,) had passed several miles in advance of the place where the accident occurred, whereas had the car been constructed on the common plan the same kind of accident would unavoidably have much injured it, perhaps thrown the whole train off the track, and seriously injured, if not killed many of the passengers.

Wilmington, Del., Sept. 28, 1840.

The undersigned takes pleasure in attesting to the value of Mr. Joseph S. Kite's invention of the Safety Beam Axle and Hub for railroad cars. They have for some time been applied to passenger cars on this road, and experience has tested that they fully accomplish the object intended. Several instances of the fracture of axles have occurred, and in such the cars have uniformly run the whole distance with entire safety. Had not this invention been used, serious accidents must have occurred.

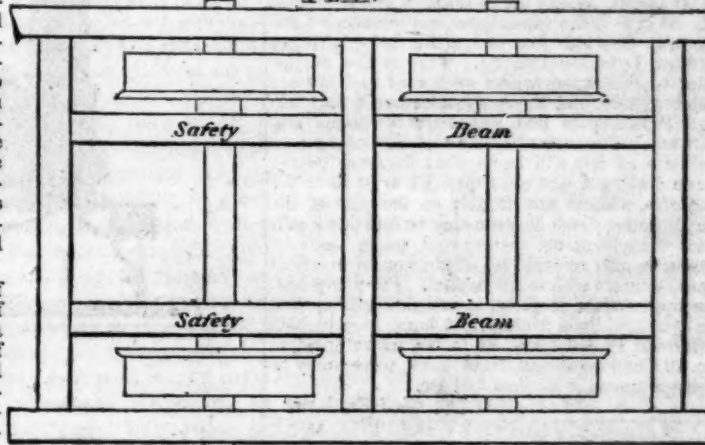
In short, we consider Mr. Kite's invention as completely successful in securing the safety of property and lives in railroad travelling, and should be used on all railroads in the country.

JOHN FRAZER, Agent,

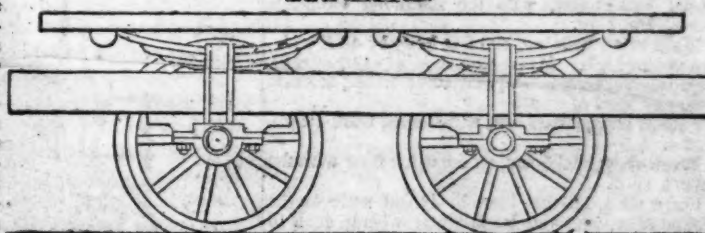
GEORGE CRAIG, Superintendent,

A model of the above improvement is to be seen at the New Jersey railroad and transportation office, No. 1 Hanover st., N. York.

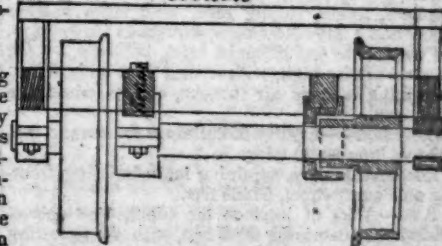
PLAN



ELEVATION



Section



TO IRON MANUFACTURERS. THE SUB-scribers, as Agents of Mr. George Crane, of Wales, having obtained a patent in the United States for his process of smelting Iron Ore with Anthracite coal, and holding an assignment of the patent obtained by the late Rev. F. W. Geissenhainer, are prepared to grant licenses for the manufacture of Iron according to Mr. Crane's principle.

A. & G. RALSTON & CO.,
ja45 No. 4 South Front St., Philadelphia, Pa.

TO RAILROAD COMPANIES AND BUILD-ERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to 1 in-calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, Tees, &c., and other fixtures to suit, fitting together with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.



Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

TO IRON MASTERS.—FOR SALE.—MILLSITES in the immediate neighborhood of Bituminous Coal and Iron Ore, of the first quality, at Ralston, Lycoming Co., Pa. This is the nearest point to tide water where such coal and ore are found together, and the communication is complete with Philadelphia and Baltimore by canals and railways. The interest on the cost of water power and lot is all that will be required for many years; the coal will not cost more than \$1 to \$1.25 at the mill sites, without any trouble on the part of the manufacturer; rich iron ore may be laid down still more cheaply at the works; and, taken together, these sites offer remarkable advantages to practical manufacturers with small capital. For pamphlets, descriptive of the property, and further information, apply to Archibald McIntyre, Albany, to Archibald Robertson, Philadelphia, or to the undersigned, at No. 23 Chambers street, New York, where may be seen specimens of the coal and ore.

W. R. CASEY, Civil Engineer,

VALUABLE PROPERTY ON THE MILLDam For Sale. A lot of land on Gravelly Point, so called, on the Mill Dam, in Roxbury, fronting on and east of Parker street, containing 68,497 square feet, with the following buildings thereon standing.

Main brick building, 120 feet long, by 46 ft wide, two stories high. A machine shop, 47x43 feet, with large engine, face, screw, and other lathes, suitable to do any kind of work.

Pattern shop, 35x32 feet, with lathes, work benches, &c.

Work shop, 86x35 feet, on the same floor with the pattern shop.

Forge shop, 118 feet long by 44 feet wide on the ground floor, with two large water wheels, each 16 feet long, 9 ft diameter, with all the gearing, shafts, drums, pulleys, &c., large and small trip hammers, furnaces, forges, rolling mill, with large balance wheel and a large blowing apparatus for the foundry.

Foundry, at end of main brick building, 60x45½ feet two stories high, with a shed part 45½x20 feet, containing a large air furnace, cupola, crane and corn oven.

Store house—a range of buildings for storage, etc., 200 feet long by 20 wide.

Locomotive shop, adjoining main building, fronting on Parker street, 54x25 feet.

Also—A lot of land on the canal, west side of Parker st., containing 6000 feet, with the following buildings thereon standing:

Boiler house 50 feet long by 30 feet wide, two stories.

Blacksmith shop, 49 feet long by 20 feet wide.

For terms, apply to HENRY ANDREWS, 48 State st., or to CURTIS, LEAVENS & CO., 106 State st., Boston, or to A. & G. RALSTON & CO., Philadelphia, ja45

RAILROAD IRON AND LOCOMOTIVE Tyres imported to order and constantly on hand by
A. & G. RALSTON
Mar. 20th 4 South Front St., Philadelphia.

THE NEWCASTLE MANUFACTURING Company continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack screws, Wrought iron work and Brass and Iron castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,
ja45 President of the Newcastle Manuf. Co.

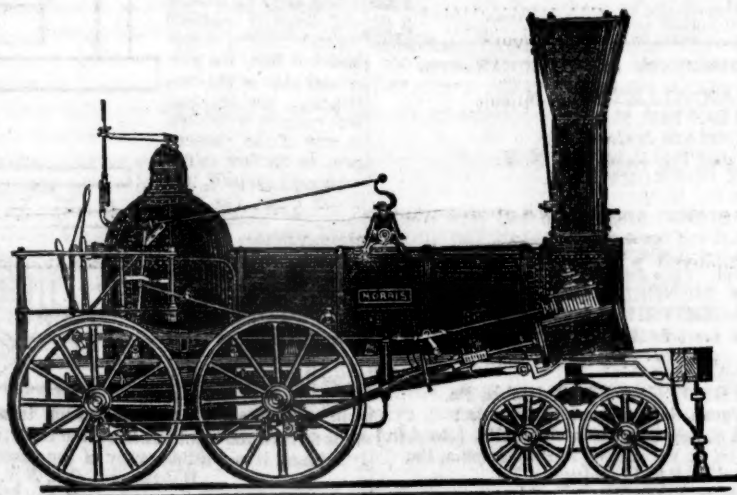
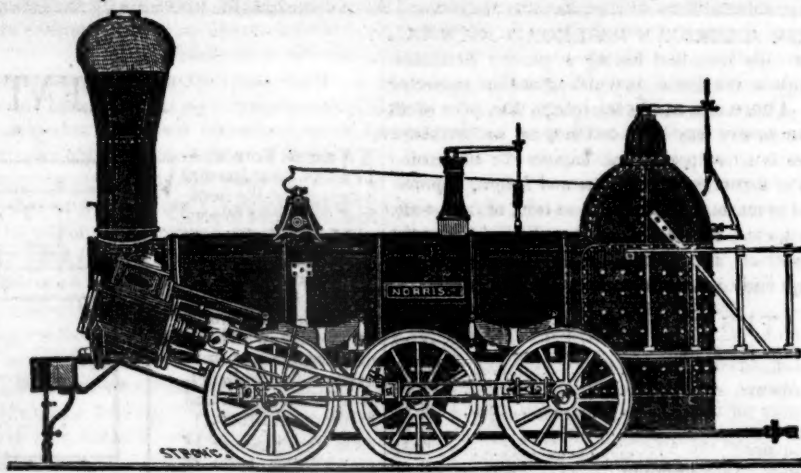
CUSHMAN'S COMPOUND IRON RAILS etc. The Subscriber having made important improvements in the construction of rails, mode n guarding against accidents from insecure joints, etc.—respectfully offers to dispose of Company, State Rights, etc., under the privileges of letters patent to Railroad Companies, Iron Founders, and others interested in the works to which the same relate. Companies reconstructing their tracks now have an opportunity of improving their roads on terms very advantageous to the varied interests connected with their construction and operation; roads having in use flat bar rails are particularly interested, as such are permanently available by the plan.

W. Mc. C. CUSHMAN, Civil Engineer,
Albany, N. Y.

Mr. C. also announces that Railroads, and other works pertaining to the profession, may be constructed under his advice or personal supervision. Applications must be post paid.

NORRIS' LOCOMOTIVE WORKS

BUSH HILL, PHILADELPHIA, Pennsylvania.



MANUFACTURE their Patent 6 Wheel Combined and 8 Wheel Locomotives of the following descriptions, viz:

Class	1,	15 inches	Diameter of	Cylinder,	×	20 inches	Stroke.
"	2,	14	"	"	×	24	"
"	3,	14½	"	"	×	20	"
"	4,	12½	"	"	×	20	"
"	5,	11½	"	"	×	20	"
"	6,	10½	"	"	×	18	"

With Wheels of any dimensions, with their Patent Arrangement for Variable Expansion. Castings of all kinds made to order; and they call attention to their Chilled Wheels, for the Trucks of Locomotives, Tenders and Cars.

NORRIS, BROTHERS.

REINAGLE'S AIR ENGINE.

The following account of what is termed the "*Leviathan Air Engine*," is taken from the "*Mining Journal*" of 5th April last. It is given by the editor of that excellent journal as "from a correspondent," without introduction or comment, from which we infer that he had not looked into the matter. We shall probably hear more of it soon.

LEVIATHAN AIR ENGINE.

A most stupendous construction of this nature has been lately made by Prof. Reinagle, in elucidation of a principle as novel as its power is tremendous. The inventor is securing patents in every civilized country for this discovery, and this will obviously account for our not entering into a more definite description of its component parts. At present this unlimited power is obtained by two distinct modes, unaided by rarification, which is a third and independent principle.

There are artificial lungs, the providers of the power and first action, as in the animal system, which send highly condensed air into a recipient, a globe of strong metal or a cylinder, which to the body of the engine is as the heart is to animal life. Air-tubes conduct the vital power to this ever-receiving and ever-ejecting vessel. From it the engine is fed by a tube, whose capacity is about one-sixth of those which receive the condensed air as leaders. Two metre air-balls are used, one next the globe or cylinder, which is called the heart. These are the two great ventricles. To each of these is employed a stop-cock, with a graduated deal scale up to 90 deg. Beyond these is placed a third stop-cock, with a long arm, or lever handle. This is also regulated by a similar graduated scale. When the air is turned on by opening these several valve-cocks to the proper points, a handle is pressed by the engineer, which opens a valve like an air-gun valve, and the engine is instantly set in motion.

The present engine has a double-crank action, but for general purposes the professor has employed a three-throw crank, which will be worked by air vessels slung, which rise and fall on the revolution of the cranks. On the top of the lift of these air vessels, which are small, an opening in a small fixed cylinder, which the before-named vessels work upon, lets loose the surplus air, driven in by air-gun velocity. The present engine stands, *per se*, (that is, not including the condensed air-cylinder, nor the air-condensers, which are eight feet high,) upon a space not exceeding two feet square; and its power, were the axle in due proportion as well as the bearings, is no less than 568 horses. The air-condensers will perform their duty for about two hours, and provide ample air to propel a train of eighty tons at thirty-five miles per hour. According to the weight used so becomes the increase of the power. To those now made, and made of wood, 610 lbs. is employed to each compressor, while 1000 lbs. or 1500 lbs. could be used if desired. When the falling body within has

done its duty, in half a minute each of as many air-condensers as the inventor may choose or require to employ, can be re-set in action for two more hours, and so on *ad infinitum*. The proportion of what Professor Reinagle denominates the heart of the machine is 1-234 of the cubic bulk of the air contents of the pair of lungs or air-condensers—*ergo*, when it is once filled, he has a disposable power, working, when he likes, up to twenty-three atmospheres; and this can be maintained for centuries without waste or failure; that is to say, a power of air is supplied equal to that which is dispensed, without the slightest variation, while it costs absolutely nothing to obtain this condensed air. Professor Faraday, having seen the drawing, and heard the theory and practice of this invention explained, complimented the inventor by declaring, that he had discovered perpetual motion of the most terrific description.

Professor Oliver Byrne, the eminent mathematician, has spent above three months with Professor Reinagle studying this unlimited power, and he defies any man to refute his assertion, that this air-power, as at present used, is boundless, and that the whole engine is so perfect as to allow of no material improvement, if any at all. Other eminent men have recently seen it, amongst them Dr. Armstrong, Dr. Carpue, and some distinguished foreigners, besides very many private friends of the inventor, of great intelligence, who have all expressed their candid opinion of its perfect simplicity, and of its immense power. The invention allows the use of air-condensers, of any length and width, up to 20,000, or 500,000, nay even 1,000,000, planted in squares, or in avenues, or clusters of circles. They would pass the air provided by them into numerous recipients, to be united as the branches of veins to the heart, so as to press into one huge receiver, or they can be prepared to use separately, as well as collectively, *at a moment's notice*. Let us suppose it is required to empty a water-choked mine, of any description, of its body of water. The common supposed contents ascertained, it may be deemed expedient to use a 10,000 or a 20,000 horse-power to do the task promptly. In such a case, forty, fifty, or sixty pairs of perpetual air-condensing providers would be used. The air within them is pressed upon with a load of 3 lbs. to every square inch; forty pairs will have a total pressure per second of 49,600 lbs., which per minute=2,976,000 lbs. This condensed air is now rarified, by a peculiar and very simple contrivance, 700° or times its volume, but only in aliquot parts of minimum quantities, safe from all communication of heat to the main body. Our readers may from this be enabled to calculate what that augmented power resists and overcomes. To give it expression would, perhaps, under present circumstances, expose it to ridicule. We, therefore, for the present, omit the statement of this Leviathan power. Professor Reinagle proposes to set this everlasting agent to pump the water from the mine by his improved cone and cylinder

pumps, of great magnitude, which have already excited the utmost astonishment.

The engine, once set in motion, can be kept going, without expense, for years and years, save one or two men for a 20,000 horse-power, to work once every two hours for one minute, and no more, to re-set the air-condensers. To enable the public to form some notion of the power obtained, Professor Reinagle has contrived a table apparatus, anything but air-tight, and partaking in the air-moving vessel of the form used in the engine, by which he moves 80 lbs. full two feet, in three seconds (placed on a four-wheeled car) by his breath alone. Even 100 lbs. can be moved in like manner. Now, according to Bostock's *Elementary System of Physiology*, who, in vol. ii., page 34, when speaking of the lungs, states that, "assuming 170 cubic inches of air as the quantity which may be forcibly expelled, and that 120 will be still left in them, we shall have 290 cubic inches as the measure of the lungs in their natural or quiescent state." He then says, a few lines further on, "that rather more than two-thirds can be expelled by a forcible expiration." Two-thirds of 290 cubic inches is 192 and a fraction. Now these 192 cubic inches forcibly ejected, using such puff of air with this invention, drives 80 lbs. and upwards, on a four-wheeled car of small size, two feet in three seconds: that is equal to 40 feet per minute. If the strongest man were to try the power of his lungs in moving the same car *alone*, by blowing through a tube against a surface at the end of a cylinder, six inches long and two inches wide, as if it were a piston, he would not be able to make it move an inch, the car weighing 3½ lbs. But when this novel method is employed in blowing into a vessel conic in form, resting over a cylinder as a mere support and guide, as well as rest, using the model horizontally, the said model and weighted car being placed on a table or the floor, and blown into through a connecting tube only one quarter of an inch bore, and the receiver or propelling air-vessel being only three inches diameter at the base of the frustrum of the cone, and nine inches long, there is acquired, as above stated, the enormous power to propel above 80 lbs. a certain distance; but, as has been witnessed, above 100 lbs. can be propelled one foot distance in two seconds. The pair of air-condensers now raised in Professor Reinagle's drawing-room, made of wood, contain 27·216 cubic inches in each, which equals 54·432. 192 cubic inches, expressed from our lungs under such feeble comprehensive powers as the diaphragm and costal muscles, with the small closing of the ribs, is proved to be capable of moving upwards of 80 lbs. two feet in three seconds. The mere contents of the pair of air-condensers, being 284 times the expulsive capacity of our lungs, using no greater power, shows that 22,720 lbs. can be propelled two feet every three seconds. But when several atmospheres are at once let loose from the general receiver or heart, which in the case of the present existing engine would be

twenty-three, a most enormous increase of power is obtained; in fact, it is expected that, with the present small engine, 220 tons can be propelled at a rate of twenty-five to thirty miles per hour; because so many and such certain expedients are at command to augment the condensed air-power. More condensers, or greater pressure by increased weight, or by rarefaction, extend to an unbounded measure the propelling power at command. The total weight of the present engine, with all its appurtenances, does not exceed 7 *cwt.* Its cost, compared to a steam engine of equal energy, is most trifling. All these advantages—united to an almost total absence of friction (there being no pistons) and no cost in the maintenance of the perpetual supply of air-power; little or no wear and tear; great simplicity of construction (few of the parts requiring nice workmanship)—must recommend it immediately for universal purposes, as one of the greatest economists ever yet introduced. It ought to be remarked that the force is only calculated for three seconds' duration; but, as the present power can be augmented for railway use by three or four pairs of air-condensers, such a leviathan motive power can be supplied, as would draw *all the carriages* which the Birmingham Company possess, at once; as two condensers and this engine will equal fourteen of the present locomotives, and go at a rate of thirty miles per hour, drawing, at the least, 420 tons. If the present horse-power locomotives do draw a train of 40 tons, at a rate of 25 to 30 miles per hour, then this engine, being 14 times the power, should move at the same speed 560 tons.

RAILROAD COMMUNICATION FROM BOSTON TO OGDENSBURG.

It is thus that the Boston people look at and encourage all enterprises which promise to contribute to the prosperity of their city. They invite applications to them for aid in constructing such works, even though in neighboring states, as are likely to increase their business, and thus enhance the value of their property. We hope our own favored city will now come forward and put its shoulders to the wheel, and ensure the speedy completion, in the most substantial manner, of *the railroad of this country*—the NEW YORK AND ERIE—a work which will, when completed, produce an influence for good upon this city, equal at least to that of the Erie canal. Its entire cost will be saved in ten years from its completion, in the reduced cost, and improved quality, of living and travel to the people of the city of New York alone, in addition to the greatly enhanced value of real estate. We have heard no truer remark, than that "*we cannot afford to have the work delayed longer*"—and we hope to be able to state that the whole amount of stock required was subscribed the first day that the books were open for that purpose, and then learn that the work is to be imme-

diately recommenced, and vigorously pushed forward, in the most judicious and energetic manner; to an early completion. That day will be an era in the annals of the city of the Knickerbockers.

Railroad to Ogdensburg.—It is now understood that the Fitchburg and Concord Railroads will, by one or more routes, be soon continued to Burlington, on the east side of Lake Champlain. By a recent act of the Legislature of New York, a company was created for the purpose of constructing a railroad from the western side of Lake Champlain to Ogdensburg in New York, which is situated at the foot of navigation from the great western lakes. Ogdensburg is two hundred miles nearer Boston than Buffalo, being about the same distance from Boston that Buffalo is from Albany. The productions of the great West can as well be shipped to Ogdensburg, through the ship canal which connects lakes Ontario and Erie, as to Buffalo, or any other point on the lake waters.

In 1840, a thorough survey of the route from Ogdensburg to Lake Champlain was made by the state of New York, at an expense of \$30,000. By this survey it was ascertained that the road, one hundred and twenty miles in length, could be built for about \$2,000,000. The route is through the counties of Clinton, Franklin and St. Lawrence, a territory not surpassed, for agricultural purposes, by any portion of the state of New York, of equal extent. The population of these three counties is supposed to be about 136,000, and is rapidly increasing. In 1840 there were three hundred and ninety stores in these counties and in Essex, which lies near the road, south of Clinton county, with a capital invested of \$1,178,258; the annual value of the agricultural productions was \$4,476,849, and of manufactures, \$4,898,049. About \$3,000,000 have been invested in manufactures. The mineral wealth of this region is said to be immense. There are already in operation in these four counties about one hundred and fifty furnaces, forges, bloomeries and rolling-mills, and the state has recently established a prison on the line of the proposed road, where five hundred convicts are to be employed in manufacturing iron.

These facts show that the business of the country between the termini of the proposed railroad is very considerable, and of course the road would derive from it much benefit and income.

But it is believed by the friends of this route that a great trade with the West will be carried on over this road; and it is pretty evident that a merchant in Boston, forwarding goods west, would adopt this route, because, by so doing, he would save two hundred miles of railroad or canal transportation. A shipper of produce in the West would send by this route for the same reason. Should this road be completed, we see no reason why it would not bring to Boston a very considerable portion of the western trade, which now goes to New York. It will be

of great use to the people of Concord, Manchester, Nashua, and Lowell, by saving to them a very considerable portion of the expense of transportation on their western produce; for when the Concord railroad is continued to Burlington, this produce will be brought to these towns direct, at a saving of from 225 to 275 miles of canal and railroad transportation.

We see no reason why this route would not take the great travel west; and travelers for pleasure would find it a most desirable mode of getting to the Falls.

In fact, we do not see why this route would not be the shortest, cheapest, quickest, and safest, from Boston to the great West, both for travellers and merchandise.

We understand commissioners from Northern New York will be in town in a few weeks, to ask the aid of our capitalists in constructing this road. We hope their visit will not be in vain, for we fully believe that such investments will be safe and profitable, and that the road will be of great utility to Boston and all New England.

RAILROADS IN NEW HAMPSHIRE.

We find the following remarks in the Boston Courier of 29th May, and can assure the editor of that excellent paper, and the people of our native State, that we also are highly gratified to learn that the right spirit is aroused in the people of New Hampshire—and we will also say a word to them in private—viz: *repeal* your restrictive and stringent laws—adopt a liberal course towards those who are willing to invest their capital among you, for the improvement of your property, as well as the advancement of their own interest. Impose all proper and necessary restrictions, but never punish yourselves by keeping other people out of your State, who desire to expend their money on your roads, and in improving your unrivalled water power, and thereby enhancing the value of your lands.

Capitalists are sometimes cautious animals. They are much more likely to be caught by gentle than violent means. Repeal your *personal liability*, and your *unanimous consent* clauses, and New Hampshire will rapidly increase in population, enterprise and wealth—and, of course, in intelligence.

We have some recollection of the character of the route, having passed over it many years since, from Concord to Lebanon, and thence to Montpelier and Burlington, (Vt.,) and being familiar with a part of it, we have long been satisfied that a railroad from Boston would, at no distant day, traverse that route—and it seems that our anticipations are soon to be realized. Of the other route, up the valley of the Merrimac, we cannot speak from personal observation; but from

the reports which we are receiving, we have no doubt of its entire feasibility; nor of the construction of a railroad over it to the Connecticut river, at or above Haverhill: which will eventually be continued to the Canada line, and to Montreal; or connect with the Portland road at some point near the line.

"We are glad to see," says the editor, "the increasing interest which the people of New Hampshire take in the projected railroads leading from Boston through that State to Vermont and Canada. A friend who called upon us yesterday, informs us that the 'Northern railroad,' commencing at Concord, and terminating at the mouth of White river, in Lebanon, was laid out by the railroad commissioners about a week since; and that their report has been accepted and ratified by the governor and council. The route, as laid out, passes through Boscaawen, by the manufacturing establishment of the Messrs. Fishers, of this city, thence to Franklin, Andover, Wilmot, Danbury, Grafton, Orange, Canaan, Enfield and Lebanon. The route was surveyed by a very competent engineer, Mr. Thomas J. Carter. His report, showing the distance, grades, and estimated expense of the proposed railroad, has been for some time before the public. An address of the Northern Railroad Company to the friends of internal improvements in N. Hampshire, from the pen of Prof. Hadduck, of Dartmouth College, disclosing the resources and obvious benefits resulting from this road, has also been published. Subscription books for the stock have been circulated on a portion only of the route of the road, and more than \$300,000 have been subscribed. Books for the last five days have been opened in Concord, Manchester, Nashua and Lowell, and about \$300,000 more of the stock has been secured. These subscriptions are not fictitious. Wherever the route is known it is appreciated, and the generous subscription of the business men, the farmers, and working men of New Hampshire, is in its favor, and establishes the fact, that the capitalist of any other region of country need not fear to make a permanent investment in this road. The charter divides its capital stock into 15,000 shares of \$100 each. The corporation is authorized to commence operations when one million of its stock is subscribed for, and more than one-half of this amount is already secured in the country."

"The friend before mentioned says:

"The liberal and tolerant feeling that pervades New Hampshire, at this time, on the subject of railroads, authorizes us to say, that at the ensuing June session of the legislature, modifications of some of our restrictive statutes will be obtained, thereby obviating the principal objections that are now raised against us. Our knowledge and faith on this subject must for the present be the pledge to the Boston capitalist, that, if he will permit us to become the trustees of some of his capital, we will not only protect it by law, but we will render a good profitable final account. It remains now with the sagacious and intelligent citizens

of Boston to decide, whether they will join hands with us, and help themselves by giving us a little aid. Will the liberal enterprise of this prosperous and growing city give additional facilities to their northern friends and business customers, at the same time adding an important link to the great chain that is eventually to bind this city with Montreal and Ogdensburgh.

"The subscription books for the stock of this corporation will, for a few days, be opened at the Lowell depot, and at Walker & Co.'s express office, No. 8 Court street.

"One of the officers of this corporation will be found at the American House, in this city, until Monday next, who will give any information in relation to this road that may be in his power."

So much for the Concord and Lebanon route, and now for the Concord, Plymouth and Haverhill, or the Merrimac valley route—in relation to which we take the following also from the Courier, with a request that some gentleman connected with it will send us a copy of the circular of the managers, that we may have all the facts before us, when we take up the subject of the merits of these several routes, from the Atlantic to Montreal.

"The board of managers of the Boston, Concord and Montreal railroad have published a statement of their doings, the prospects of the enterprise and their reliance upon its success. They make all their calculations and estimates upon the supposition that the 'Northern' road from Concord to Lebanon is to be built, and they ask that the two roads may not be confounded together, as they in no wise interfere, and each has a different point for its terminus.

"The survey of this road was commenced in the spring, has been completed as far as Plymouth, and is still progressing under the direction of Mr. Wm. P. Crocker. We make the following extracts from the circular of the managers:"

"This road, it will be seen by looking at the map, passes through a central portion of our State—the towns of Canterbury, Northfield, Sandbornton, Gilmanton, Gilford, Meredith, New Hampton, Holderness, Bridgewater, Plymouth, Rumney, Wentworth, Warren and Benton, to Haverhill, with the right to extend up the Connecticut to any convenient crossing place between Haverhill and Littleton. The towns through which it passes, as far up as Haverhill, contain a population of 26,326. On the route there is already much manufacturing business carried on, and a vast amount of unoccupied water power. There are a number of flourishing villages, and a large extent of rich agricultural territory immediately upon the route; but in addition to these there are between forty and fifty other towns in our State, with a population of more than fifty thousand, whose business must necessarily pass over this road, making an aggregate of more than one-fourth of our entire population, and one-fifth of the valuation of the State, whose

interests are to be identified with the making of this road. We may mention as evidence of the demands of the public for the construction of the road, the fact that the present tonnage of the towns in New Hampshire that would naturally fall into this great thoroughfare, has been ascertained to be at least *thirty thousand tons per annum*—the number of passengers over the different stage roads embraced in the route exceeds *thirty-seven thousand annually*. With the prospective increase of business which may be anticipated with railroad facilities, in manufacturing business—in the working of the valuable copper, zinc, iron and other minerals which are known to abound upon the route—the lime, scythe stones, lumber, etc., together with the great increase of travel incident to an increase of business, and the pleasure travelling in the warm season to the Lake and Mountain scenery of this "Switzerland of America," we think this enterprise holds out sufficient inducements to secure the necessary capital for its construction, without looking further for a promise of an ample reward upon the investment.

"But this enterprise has other objects in view—other sources of reliance for a return of profits. The whole of Caledonia, Orleans and Essex counties in Vermont, and a portion of Orange, Washington and Lamoille, will, from necessity as well as choice, pass over this road when constructed. And we may mention the fact, that in prospective, this enterprise has in view a connection of the city of Boston with the city of Montreal. The whole line has now been surveyed, and charters are obtained for the construction of the road. The distance from Boston to Montreal over this route we state from the best information we have, as follows: from Boston to Concord, 75 miles; from Concord to Stanstead, 150; from Stanstead to Montreal, by the route recently surveyed, by the outlet of Lake Memphremagog, 92 miles; total, 317 miles. The route surveyed by Sherbrooke is 33 miles further. The distance in New Hampshire, which is to be constructed by this corporation, will be about 80 miles; but it is not contemplated at present to go further than Haverhill. That point reached, this corporation, while it affords facilities to the vast interests we have alluded to in our own State and in Vermont, may rely upon a rich return of profits upon their investment, while the more remote, but no less important desideratum of connecting the two great cities of Boston and Montreal shall be matured and carried into effect."

"It is stated that on this route the maximum of gradients will be 39.6, for the whole route from Concord to Haverhill, and but few planes will reach even that moderate grade. Books have been opened for subscriptions to the stock, and \$60,000 has been subscribed in Meredith, including \$10,000 taken by the town."

The commissioners of the North Branch canal company have advertised that the books will be opened at Wilkesbarre on the 17th of June, to receive subscriptions to the stock of the company.—[Pa. Int.]

ENGLISH RAILROAD SHARE-LIST.

NAME OF RAILWAY.	Miles opened.	Total sums, in pounds, authorized to be raised by shares.		Total sums, in pounds, authorized to be raised by loan or mortgage.		Total sums, in pounds, expended at date of latest balance sheets.		Cost of working in pounds, as stated in latest balance sheets.		Total earnings, in pounds, for six months as stated in latest balance sheets.		Dividend at last meeting.		Paid on share.		Value of share.		NEW AND PROPOSED RAILWAYS.	Share Capital.
												Per share.	Per cent.						
												£ s. d.	£ s. d.						
Arbroath and Forfar.....	15	102,000		35,000		138,870						0 12 6	2 10 0	25	27			Aberdeen.....	1,600,000
Birmingham and Gloucester.....	55	1,187,500		407,336		1,500,806		39,261		53,203		1 5 0	2 10 0	100	100			Barnsley Junction.....	200,000
Brandling Junction.....	23	161,700		365,470		481,452						4 10 0	5 10 0	50	54			Belfast and Ballymena.....	385,000
Bristol and Gloucester.....	37	400,000		211,000								nihil.		30	36			Blackburn and Accrington.....	400,000
Chester and Birkenhead.....	14	750,000		143,170		518,989		5,856		13,148		0 8 6	1 14 0	50	32			Birk. and Ches. Junction.....	1,000,000
Dublin and Drogheda.....	31	450,000		150,000		500,869						nihil.		55	72			Bolt., Wigan and Liverpool.....	800,000
Dublin and Kingston.....	6	200,000		152,200		359,000						6 0 0	6 0 0	100	166			Caledonian.....	1,800,000
Dundee and Arbroath.....	16	100,000		49,445		153,416		2,989		6,993		5 0 5	0 0 0	25	29			Cambridge and Lincoln.....	1,250,000
Durham and Sunderland.....	18	169,350		124,055		270,392		9,889		17,702		nihil.		34	29			Chatham and Portsmouth.....	1,900,000
East County and North and East.....	86	4,443,200		1,341,155		3,931,905		47,385		118,726		1 6 6		45	57			Chester and Wrexham.....	120,000
Edinburgh and Glasgow.....	46	1,125,000		379,523		1,649,523		29,429		55,866		2 6 4	10 0 0	50	57			Churnet valley.....	1,800,000
Glasgow, Paisley and Ayr.....	51	937,500		1,066,951		12,446		36,736		1 2 6		4 10 0	50	60				Direct Northern to York.....	4,000,000
Glasgow, Paisley and Greenock.....	22	650,000		216,666		787,884		11,572		23,177		5 0 2	0 0 0	25	12			Dublin and Belfast.....	950,000
Grand Junction.....	104	2,478,712		2,453,169		84,309		195,080		5 0 10		0 0 0	100	210				Dundee and Perth.....	250,000
Great North of England.....	45	969,000		581,017		1,262,518		12,201		36,189		12 6 3	5 0 0	100	119			Edinburg and Northern.....	800,000
Great Western.....	22	4,650,000		3,679,343		7,272,539		132,235		369,904		10 0 0	7 138					Ely and Bedford.....	270,000
Hartlepool.....	15	438,000		155,540		719,205						8 0 0	100					Glasgow, Dum. & Carlisle.....	1,300,000
Leicester and Swannington.....	16	140,000		140,000				2,207		6,317		1 5 0	5 0 0	50				Gt. South and West Ext.....	1,200,000
Liverpool and Manchester.....	32	1,209,000		497,750		1,739,835		57,239		117,559		5 0 0	10 0 0	100	203			Gt. Grimsby and Sheffield.....	600,000
Llanelli.....	27	200,000		44,000		221,624						1 0 0	2 0 0	87				Harwich and E. coun. Jun.....	160,000
London and Birmingham.....	12	6,874,976		1,928,845		6,393,468		92,823		405,768		10 0 0	100	218				Huddersfield & M. rl. & cl.....	600,000
London and Blackwall.....	3	804,000		266,000		1,315,640		15,978		23,870				16	6			Kendal and Windermere.....	125,000
London and Brighton.....	56	1,793,800		998,350		2,630,451		29,372		84,880		0 12 0	2 8 0	50	47			Leeds and Dewsbury.....	400,000
London and Croyden.....	8	550,000		229,000		761,885		7,583		10,545		0 5 0	2 10 0	14	17			Leeds and Thirsk.....	800,000
London and Greenwich.....	3	759,383		233,300		1,040,930		15,193		28,933		nihil.		13	10			Liv. Ormskirk and Preston.....	600,000
London and South Western.....	92	2,222,100		630,100		2,596,291		68,457		150,469		12 6 10	6 10 0	41	73			London and Portsmouth.....	1,750,000
Manchester and Birmingham.....	31	2,100,000		690,586		1,923,699		15,397		58,162		1 0 6	5 0 0	40	48			London and York.....	5,000,000
Manchester and Bolton.....	10	778,100		197,730		773,743		8,585		21,140		2 2 0	4 10 0	93	110			Londonderry & Enniskillen.....	500,000
Manchester and Leeds and Hull.....	81	2,937,500		1,943,932		3,921,593		46,653		156,761		7 10 10	6 10 0	60	88			Lynn and Ely.....	200,000
Midland railway.....	178	5,158,900		1,719,630		6,279,056		76,983		281,898				100	96			Manchester, Bury and Ross.....	300,000
Newcastle and Carlisle.....	61	878,240		188,563		1,135,069		26,499		73,947		4 0 0	4 0 0	100	105			Manchester and Buxton.....	250,000
Newcastle and Darlington.....	23	500,000		405,728								nihil.		21	49			Mullingar and Athlone.....	
Newcastle and North Shields.....	7	150,000		153,876		309,629		8,943		18,466		2 0 0	50	37				Newcastle and Berwick.....	700,000
North Union.....	39	739,201		308,306		1,015,447		9,071		37,794		10 0 0	6 16 8	100	104			Richmond & W. End Junc.....	
Paris and Orleans.....	82	1,600,000		400,000		1,978,415						0 16 0	8 0 0	20	39			Scottish Central.....	700,000
Paris and Rouen.....	84	1,440,000						31,247		91,171			8 0 0	20	38			Sheffield and Lincolnshire.....	650,000
Preston and Wyre.....	19	830,000		179,852		355,161		4,191		7,066		nihil.		50	18			Shrewsbury and Gd. Junc.....	400,000
Sheffield and Manchester.....	19	1,150,000		311,759		951,455		11,895		14,876		nihil.		82	93			Shrew. Wolv. Dudley & B.....	900,000
South Eastern.....	88	2,996,000		1,530,277		3,464,172		40,993		81,482		0 10 6	2 2 0	50	39			Trent Valley.....	900,000
Taff Vale.....	30	465,000		154,785		590,006		8,509		18,414		0 0 0	6 5 0	100	55			Trent Valley Extension.....	64,000
Ulster.....	25	519,150		20,000		348,626		5,401		13,856		0 15 0	5 1 8	29	37			West London Extension.....	1,000,000
Yarmouth and Norwich.....	20	187,500		62,500		230,250						nihil.		16	25			West Yorkshire.....	1,000,000
York and N. Mid. and Leeds and Selby.....	28	1,062,500		167,500		676,644		27,132		55,752		2 10 0	10 0 0	50	100			Whitehaven and Maryport.....	100,000

Steam and Miscellaneous.

NAME OF COMPANY.	Num. of shares.	Am't. of share.	Amount paid.	Div. p. c. per ann.	Last price.	Present price.	NAME OF COMPANY.	Num. of shares.	Am't. of share.	Amount paid.	Div. p. c. per ann.	Last price.	Present price.
Anglo Mexican Mint.....	10,000	10	10	15	15	15	Loughborough.....	70	142	142	70	1140	
Anti Dry Rot.....	10,000	18	18	2	2	2	Monmouthshire.....	2,409	100	100	10	160	160
Australian Trust Company.....	5,700	100	35	34	34	34	Melton Mowbray.....	250	100	100	10	117	117
General Steam Navigation.....	20,000	15	14	10	27	27	Mersey and Irwell.....	500	100	100	10		
Gt. Western Steam Pa.....			100	25			Macclesfield.....	3,000	100	100	2	15	15
Metropolitan Wood Pav.....	15,000	10	6	5	6	6	Neath.....	247	100	100	17	365	365
Patent Elastic Pav.....	10,000	1	1	5	1	1	Oxford.....	1,786	100	100	30	505	
Peninsular and Oriental.....	11,493	50	50	7	64	65	Regents or Loncon.....	21,418	33	33	2	25	25
Ditto.....	3,200	50	40	7			Shropshire.....	500	125	125	6	120	120
Polytechnic Institution.....				6			Somerset coal.....	800	150	150	7	123	123
Reversionary Int. Soc.....	5,329	100	100	4	104	104	Stafford and Worcester.....	700	140	140	25	480	480
R. Mail Steam Packet.....	15,000	100	60		36	37	Shrewsbury.....	500	125	125	12	230	230
South Western Steam.....	4,000	25	5				Stourbridge.....	300	145	145	14	360	360
Ship Owners' Towing.....	3,000	10	7	10	15		Stroudwater.....	200	150	150	19		
Thames Tunnel.....	4,000	50	50				Swansea.....	533	100	100	15	240	240
University College.....	1,500	100	100				Severn & Why & Rail Av.....	3,762	26	26	5	30	30
							Trent and Mersey.....	2,600	50	50	65	495	
							Thames and Medway.....	8,149	19	19		10	10
							Warwick and Birmingham.....	1,000	100	100	10	167	
							Warwick and Napton.....	980	100	100	8	122	

Canals.

NAME OF COMPANY.	Num. of shares.	Am't. of share.	Amount paid.	Div. p. c. per ann.	Last price.	Present price.	NAME OF COMPANY.	Num. of shares.	Am't. of share.	Amount paid.	Div. p. c. per ann.	Last price.	Present price.
Ashby de la Zouch.....	1,432	113	av.	4	70	70	Birmingham.....	4,800	25	25	3	28	28
Barnsley.....	720	100	100	14	180	180	East London.....	4,433	100	100	8	223	225
Birmingham, 1-16 share.....	3,000	118	79	10	150	160	Grand Junction.....	5,500	av.	41 2-3	7	88	90
Do. and Liverpool Junction.....	4,000	160	100		13	13	New River L. B. Ann.....	1,500			2		
Coventry.....	500	100	100	20	365	365	Manchester and Salford.....	6,486	av.	30	8	57	57
Cromford.....	460	do.	do.	24	250	250	Vauxhall, lt. S. London.....	1,000		100	5	55	55
Derby.....	600	do.	do.	9	105	105	West Middlesex.....	8,294	av.	63	6	126	127
Erewash.....	231	do.	do.	32	440	440							
Forth and Clyde.....	1,297	400	40	4	440	440							
Grand Junction.....	11,600	100	100	7	162	161							
Grand Surrey.....	1,500	do.	do.		20								
Gloucester and Rerkeley.....	5,000	do.	do.		8	8							
Grantham.....	749	150	150	8	185	185							
Lancaster.....	11,699	47	47	3	40	40							
Leeds and Liverpool.....	2,897	100	100	34	640	640							
Leicester.....	545	14	140	9	139	139							

Water Works.

Birmingham.....	4,800	25	25	3½	28	28
East London.....	4,433	100	100	8	223	225
Grand Junction.....	5,500	av.	41 2-3	7½	88	90
New River L. B. Ann.....	1,500			2½		
Manchester and Salford.....	6,486	av.	30	8½	57	57
Vauxhall, lt. S. London.....	1,000		100	5	55	55
West Middlesex.....	8,294	av.	63½	6½	126	127
Docks.						
Commercial Dock.....	1,065	100	100	3	80	
East and West India.....		sto.		5½	137	
London.....	3,238,310	sto.		4½	114½	115
St. Katharine.....	1,352,752	sto.		5	116	171
Southampton.....	7,000	50	50			

AMERICAN STATE WORKS AND CANALS, ETC.

STATE WORKS.			Length in miles.	Cost.	1843.		1844.		The State Canals are all 4 feet deep, and the locks are 13 to 17 feet wide, and 80 to 90 feet in length.								
					Income.	Expend.	Income.	Expend.									
N. Y.	1	Black river canal	35	1,524,967					<p>The six millions paid to the canal fund from auction and salt duties are not included in the estimate of cost. The Genesee valley and the Black river canals require large sums for their completion, the interest of which <i>additional</i> sum is much greater than the estimated gross income of these canals when finished. The sums required to complete these two canals are \$2,000,000 and \$600,000, making their total cost when finished \$5,553,000 and \$2,409,000; an expenditure incurred on estimated incomes (admitted to be liberal,) of \$39,000 and \$14,000 respectively.</p> <p>The total receipts from the works of Pennsylvania for 1843 were \$1,019,401; for 1844 \$1,164,326, and the cost about 30 millions.</p> <p>The receipts for 1844 were as follows:</p> <table><tr><td>Canal tolls,</td><td>578,404</td></tr><tr><td>Railroad tolls,</td><td>252,855</td></tr><tr><td>Motive power,</td><td>319,590</td></tr><tr><td>Trucks,</td><td>13,477</td></tr></table> <p>of which \$585,922 is from 118 miles of railroad, and \$578,404 from 550 miles of canal.</p> <p>The canals of Ohio are supported by a property tax of 5½ mills on the dollar. There are 853 miles of canal in the State, which yielded in 1843 \$471,623, and in 1844 \$515,393, the cost, 1st Jan. '43 being \$15,577,233. The increase of '44 over '43 is only \$43,770, though the year '44 has exhibited a greater increase throughout the country than ever before known.</p> <p>These 21 millions on sundry works yield no income whatever.</p> <p>The central railroad yields above 6 per cent., and is the only State work—the Erie canal excepted—which is able to stand alone.</p>	Canal tolls,	578,404	Railroad tolls,	252,855	Motive power,	319,590	Trucks,	13,477
Canal tolls,	578,404																
Railroad tolls,	252,855																
Motive power,	319,590																
Trucks,	13,477																
"	2	Cayuga and Seneca	21	237,000	16,557	10,953	24,618	14,443									
"	3	Champlain canal	64	1,251,604	102,308		116,739										
"	4	Chemung	23	684,600	8,140	14,486	14,385	12,740									
"	5	Chenango	97	2,420,000	16,195	15,967	22,179	15,960									
"	6	Crooked lake	8	156,777	461	3,674	1,498	3,951									
"	7	Erie—enlargement of	363	12,648,852	1,880,316												
"	8	Genesee valley	120	3,739,000													
"	9	52 miles opened, cost \$1,500,000			12,292	13,819	19,641	15,557									
"	10	Oneida lake	6	50,000	225	2,239	621	1,636									
Pa.	11	Oswego	38	565,437	29,147	22,742	56,165	28,599									
"	12	Beaver division canal	25				7,381	5,386									
"	13	Delaware canal	60				109,278	22,870									
"	14	French creek	45														
"	15	Seneca river towing path		69,276			381										
"	16	Columbia railroad	82				443,336	205,067									
"	17	Eastern division	36				179,781	138,915									
"	18	Juniata canal	93														
"	19	Portage railroad	130				351,102	248,943									
"	20	Western division canal	105														
"	21	North branch Susquehanna canal	73				101,949	57,633									
"	22	West " "	72														
Ohio	23	Hocking canal	56	975,130	4,757		5,286	4,139									
"	24	Miami canal	85	1,660,742	68,640	38,826	77,844	22,341									
"	25	Miami extension	105	2,856,636	8,291		12,723	14,741									
"	26	Miami northern division	35	322,000			unfin'd.										
"	27	Muskingum	91	1,627,318	23,167		29,385	15,027									
"	28	Ohio	334	4,600,000	322,754	123,398	343,711	113,210									
"	29	Wabash	91	3,028,340	35,922	6,400	48,589	12,817									
"	30	Walhonding	25	607,269	838	39,005	1,977	1,238									
"	31	Western road	31	255,015	7,254	1,782	8,747	2,929									
Ind.	32	Sundry works		11,000,000													
"	33	Maume canal															
Ill.	34	Sundry works		10,000,000													
Mich.	35	Central railroad	110	1,842,308	149,987	75,960	211,170	89,420									
"	36	Southern railroad	68	936,295	24,064	7,907	60,341	70,000									

CANALS.		Length in miles.	Cost.	1843.		Div. per cent.	1844.		Div. per cent.	Value of stock.	REMARKS.
				Gross.	Nett.		Gross.	Nett.			
	Blackstone										<p>We may, perhaps, at some future time be enabled to give the particulars of all these canals.</p> <p>The Chesapeake and Ohio canal is not yet completed to the coal mines, hence its trifling income.</p> <p>The enlargement of the Schuylkill canal has been commenced.</p> <p>The Morris canal was lately sold for one million, about one-fourth of its cost. It is said in the papers that it is to be enlarged. We have seen no report, nor heard of the appointment of any engineer.</p>
	Bald Eagle Navigation	25	400,000								
	Beaver and Sandy, (part)		1,000,000								
	Charleston, (S. C.)										
	Chesapeake and Ohio	184	12,370,470	47,637							
	Conestoga	12	300,000								
	Delaware and Chesapeake	13									
	Schuylkill	108	3,500,000	279,795	102,221		190,693	120,624			
	Farmington										
	James river and Kenhawa										
	Middlesex										
	Port Deposit	10	200,000								
	Delaware and Raritan	43	2,900,000	99,623	53,327		131,491	84,455			
	Southwark		300,000								
	Tide Water	45	2,900,000								
	Union	80	2,000,000								
	Morris	101	1,000,000								
	Dismal Swamp										

CANADIAN CANALS.		Length in miles.	No. of locks.	Lockage in feet.	Size of locks.		Width of canal.		Estimate.	Expended to Sept. 1843.	Income.	
					Length of chamber.	Width.	Depth on mitre sill.	Bottom.	Surface.		1843.	1844.
The Welland canal.					feet.	feet.	feet.	feet.	feet.	3,948,572	2,485,572	64,658
{ Main trunk from Port Colborne to Port Dalhousie		28	31	328	150	26 1-2	8 1-2	45	81			
{ Junction branch to Dunville		21	1	6	150	26 1-2	8 1-2	35	71			
{ Broad creek branch to Port Maitland		1 1-2	1	6	200	45	9	45	85			
The St. Lawrence canal.												
{ Galops and Port Cardinal		2	2	7	200	45	9	50	90			
{ Rapid Plat.		4	2	11 1-2	200	45	9	50	90	672,498	973	
{ Farren's point		3-4	1	3 1-2	200	45	9	50	90			
Cornwall, passing the Long Sault rapids.		11 1-2	7	48	200	55	9	100	150	865,372	1,665,663	
Beauharnois, do. Coteau, Cedars and Cascades road		11 1-4	9	82 1-2	200	45	9	80	120	1,190,087	275,426	
Lachine, do. Lachine rapids.		8 1-2	5	44 1-2	200	45	9	80	120	old canal.	400,000	29,288
Elargement of do.										1,001,333	61,439	
Total from lake Erie to the sea.		12	57	525								
Chambly		66	9	74	120	24	6	36	60	200,000	440,000	1,409

COAL COMPANIES.		Length in miles.	Cost.	1843.		Div. per cent.	1844.		Div. per cent.	Value of stock.	REMARKS.
		R. rd. Canals.		Gross.	Nett.		Gross.	Nett.			
	Delaware and Hudson	16	2,800,000	930,203	196,702	10				130	
	Lehigh	20	6,000,000							31	

AMERICAN RAILROADS.													
RAILROADS.		Length in miles.	Cost.	Loans and debts.	Number of shares.	Paid on share	1843. Income.		Div. per cent.	1844. Income.		Div. per cent.	SALES.
							Gross.	Nett.		Gross.	Nett.		Week ending June 4th. Shares. Price
Me.	1. Portland, Saco and Portsmouth.....	50	1,200,000				89,997	47,166	7	124,497	74,841	6	113½
N. H.	2. Concord.....	35	750,000										59 101½
Mass.	3. Boston and Maine.....	56	1,485,461				178,745	68,499	6	233,101	86,401	6½	8 65½
"	4. Boston and Maine extension.....	17 1-4	455,703	unfin.									
"	5. Boston and Lowell.....	26	1,863,746				277,315	144,000	8	316,909	147,615	8	120½
"	6. Boston and Providence.....	41	1,886,135	none.	18,600	100	233,388	110,823	6	282,701	156,109	6	108½
"	7. Boston and Worcester.....	44	2,914,078				4 0,141	162,000	6	423,437	195,163	7½	118½
"	8. Berkshire.....	21	250,000	not stated				17,500	7	17,737			
"	9. Charlestown branch.....		280,260						13	34,654	13,971	5½	70½
"	10. Eastern.....	54	2,388,631				279,563	140,595	6	337,238	227,920	8	112
"	11. Fitchburg.....	50	1,150,000	just op'n'd						42,759	26,835		120
"	12. Nashua and Lowell.....	14 1-2	380,000				84,079		8	94,588	34,944	10	122½
"	13. New Bedford and Taunton.....	20	430,962				50,671	24,000	6	64,998	24,000	6	
"	14. Northampton and Springfield.....		172,883	unfin.									
"	15. Norwich and Worcester.....	59	2,170,366	900,000	16,535	100	162,336	24,871		230,674	99,464	3	71½
"	16. Old Colony.....		87,820	unfin.									9,853 72½
"	17. Stoughton branch.....	4	63,075	unfin.									
"	18. Taunton branch.....	11	250,000					20,000	8	96,687	20,000	8	118
"	19. Vermont and Massachusetts.....												
"	20. West Stockbridge.....	3	41,516	200		100						4	
"	21. Western, (117 miles in Mass.,).....	156	7,686,202	4,686,202	30,000		573,882	284,432		753,753	439,679	3	104
"	22. Worcester branch to Milbury.....		8,431	506									131 104½
"	23. Housatonic, (10 months,).....	74	1,244,123							150,000			
Con	24. Hartford and New Haven.....	38	1,100,000	100,000	10,000	100						6	30
"	25. Hartford and Springfield.....	25 1-2	600,000	400,000	2,000	100						89	115 29½
"	26. Stonington, (year ending 1st Sept.,).....	48	2,600,000	650,000	13,000	100	113,889			154,724	79,845	35	2,634 32½
N. Y.	27. Attica and Buffalo.....	31	336,211				45,896	7,522		73,248	48,033	0	
"	28. Auburn and Rochester.....	78	1,796,342	200,000	14,000	100	189,693	112,000		237,667	152,007	6	107½
"	29. Auburn and Syracuse.....	26	766,657			133½	86,291	27,334		96,738	52,544	6	116
"	30. Buffalo and Niagara.....	22	200,000		1,500							100	
"	31. Erie, (446 miles,).....		5,000,000									30½	689 28½
"	32. Erie, opened.....	53						48,000		126,020	59,075		
"	33. Harlem.....	26	1,206,231							140,685	62,399		71½
"	34. Hudson and Berkshire.....	31	575,613		50					35,029	1,789	0	14
"	35. Long Island.....	96	1,610,221	392,340	29,846					153,456	58,996	0	71½
"	36. Mohawk and Hudson.....	17	317,893	400,000	10,000	100	69,948	58,780		79,804	45,763	0	60
"	37. Saratoga and Schenectady.....	22	303,658				42,242	3,000	1	34,666	8,455	0	
"	38. Schenectady and Troy.....	20 1-2	640,800				28,043			32,646	6,365	0	
"	39. Syracuse and Utica.....	53	1,115,897	none.	16,000	62½	163,701	72,000		192,061	120,992	8	116
"	40. Tonawanda.....	43	727,332				76,227			114,177	75,865	5	
"	41. Troy and Greenbush.....	6	180,000										
"	42. Troy and Saratoga.....	25	475,801				44,325	21,000		38,502	9,971	2½	
"	43. Utica and Schenectady.....	78	2,168,165	none.	20,000	100	277,164	180,000	9	331,932	199,094	8	129
N. J.	44. Camden and Amboy.....	61	3,200,000				682,832	383,880		784,191	404,956		110
"	45. Elizabethtown and Somerville.....	26											14 110
"	46. New Jersey.....	34	500,000									95	10 95
"	47. Paterson.....	16	2,000,000									6	85
Pa.	48. Beaver Meadow.....	26	500,000										375 87
"	49. Cumberland Valley.....	46	1,000,000										
"	50. Harrisburg and Lancaster.....	36	1,250,000									30	
"	51. Hazleton branch.....	10	860,000										
"	52. Little Schuylkill.....	29	120,000										
"	53. Blossburg and Corning.....	40	900,000										
"	54. Mauch Chunk.....	9	600,000										
"	55. Minehill and Schuylkill Haven.....	18	100,000						12			143½	25 77
"	56. Norristown.....	20	315,000									6½	
"	57. Philadelphia and Trenton.....	30	800,000									104	
"	58. Pottsville and Danville.....	29 1-2	400,000										
"	59. Reading.....	94	1,500,000	7,447,570	40,200	50				597,613	343,511	49	560 50
"	60. Schuylkill valley.....	10	9,457,570										
"	61. Williamsport and Elmira.....	25	1,000,000				20,000						
"	62. Philadelphia and Baltimore.....	93	400,000				43,043	200,000			210,000	18½	3,744 18½
Del.	63. Frenchtown.....	16	4,400,000										
Md.	64. Baltimore and Ohio, (1st Oct.).....	188	600,000				575,235	279,402		58,620	346,946	48½	125 50
"	65. Baltimore and Susquehanna.....	58	7,623,600									5	50 2½
"	66. Baltimore and Washington.....	38	3,000,000				177,227	71,691		212,129	104,529	84	
Va.	67. Greensville and Roanoke.....	17 1-2	1,800,000										
"	68. Petersburg and Roanoke.....	60	260,000							122,871	72,898	3	
"	69. Portsmouth and Roanoke.....	78 1-2	969,880										
"	70. Richmond and Fredericksburg.....	61 1-2	850,000										
"	71. Richmond and Petersburg.....	22 1-2	1,200,000										
"	72. Winchester and Potomac.....	32	700,000										
N. C.	73. Raleigh and Gaston.....	84 1-2	500,000										
"	74. Wilmington and Raleigh.....	161	1,360,000										
S. C.	75. South Carolina.....	136	1,800,000		34,410	75				532,871	140,196	5	
"	76. Columbia.....	66					201,464	77,456		328,425	180,704		
Ga.	77. Central.....	190	5,671,452				227,532	93,190					
"	78. Georgia.....	147 1-2	2,581,723				248,026	158,207		248,096	147,523		
"	79. Montgomery and West Point.....	89	2,650,000	170,000		100				35,000	15,000		
Ky.	80. Lexington and Ohio.....	40	500,000										
Ohio	81. Little Miami.....	40	450,000										
"	82. Mad river.....	40	400,000										
Ind.	83. Madison and Indianapolis.....	56	152,000										
Can.	84. Champlain and St. Lawrence.....	15	212,000					12,000		58,000	24,000	110	

Correspondents will oblige us by sending in their communications by Monday morning at latest.

PRINCIPAL CONTENTS.

Reinagle's air engine.....	355
Railway communication from Boston to Ogdensburg.....	356
Railroads in New Hampshire.....	356
Long Island railroad route to Boston.....	362
The United States mail and the railroads.....	362
The suspension aqueduct.....	363
New York and Erie railroad.....	364
Vermont railroads.....	365
Progress of railways.....	366
Heating buildings with hot water.....	366

AMERICAN RAILROAD JOURNAL.

PUBLISHED BY D. K. MINOR, 23 Chambers street, N.Y.

Thursday, June 5, 1845.

HIGH FARES—BALTIMORE AND WASHINGTON RAILROAD.

The remarks by the editor of the National Intelligencer, in another column, in relation to the rate of fare on this railroad, cannot, we believe, be necessary or appropriate; as we take it for granted—even though the editor had "made some inquiry on the subject"—that the reports that "the directors of the Baltimore and Ohio Railroad Company have determined not to reduce the fare of \$2.50 per passenger, now charged on the Washington branch," of thirty-eight miles—cannot be correct.

Loud and just complaints have long been made by the travelling community at the high charges on this road, but they have been submitted to with a better grace than would otherwise have been the case, in consequence of the bonus, fifty cents on each passenger, which they had to pay the State—a very *unwise* and *unjust* tax, as we think, upon travellers who have occasion to pass from Baltimore to Washington. This has, if we recollect right, been assigned by the directors as a reason for not reducing the fare, until voluntary legislation should allow them to do so without its falling entirely on the company—but *prorata* on the State and the company. There was legislation upon this subject during the late session of the legislature of Maryland, and we understood that the company was authorized—and we supposed that they were inclined—to act under it, and meet the loud calls, not only of the travelling community, but also, as we think, by their *own interest*, by a considerable reduction of their present charge. And we shall not believe that they are about to disappoint the *reasonable* expectations of the community, until their own acts compel belief. Such a course would, in our opinion, be exceedingly unwise on their part; nothing would tend more to raise up a strong and *successful* opposition by post coaches, which will surely be patronized by many who are the fast friends of railroads. *Low fares, high speed*, and an obliging and conciliating course to those who *must*—or from choice will—travel, is the true policy for railroad companies; and we have too much confidence in the sagacity of the managers of the Baltimore and Ohio Railroad, to credit these reports; but a few days will settle the question, as the 1st of June is the period, we believe, designated in the law, at which a reduction may be made.

CHEAP TRAVELLING NORTH.

The following statement of cheap travelling to Montreal is taken from the American Traveller—and this statement, low as it is, is higher on some part of the route than the reality. From New York to Albany the fare, or charge for passage, is only 25 cents! and a good berth included, only 50 cents! From Albany northward we are not familiar, but

presume the Traveller is, as it is always, quite at home in such matters.

"CHEAP FARE.—Persons travelling now-a-days can go almost for nothing:
From New York to Albany, 150 miles per steamboat, first class..... \$0 50
From Albany to Whitehall, steamboat to Troy and packet boat thence to Whitehall, 77 miles..... 1 13
From Whitehall to St. Johns by steamboat, 150 miles..... 0 25
From St. Johns to Laprairie, by railroad, 15 miles..... 0 50
From Laprairie to Montreal, by steamboat, 9 miles..... 0 50
Total, 401 miles..... \$2 88

WARMING AND VENTILATING BUILDINGS.

We ask the attention of our readers to the following card; and bespeak for the gentlemen, whose names are attached to it, an examination of their mode of operations by those who desire to introduce a superior and economical system of warming and ventilating buildings.

JORDAN L. MOTT AND JOSEPH CURTIS—Offer to the public the application of their respective Patents for a Plenum and Vacuum Ventilation and Warming of hospitals, almshouses, prisons, churches, hotels, factories, ball and court rooms, dwelling houses of the first class, as well as those built for many families, (also, chimneys that smoke during variable winds,) ships' cabins, steam and canal boats, railroad cars and privies.

Orders received, and exhibitions of our means of operating, are to be seen at No. 264 Water street.

The editor of the Portland Advertiser has the following, headed "facts for railroads:"

"The Troy Daily Whig says:—passengers who left Montreal on Monday morning, by the Francis Saltus, reached this city in time for the Albany on Tuesday morning."

"Twenty-four hours from Montreal to Troy—36 hours to New York. We will put them through from Montreal to the ocean in ten hours."

UTICA AND SCHENECTADY RAILROAD COMPANY.

At an election for directors of the Utica and Schenectady Railroad Company, held on the 2d inst., the following persons were elected:

Erastus Corning, Albany; Nicholas Devereux, Utica; Nathaniel S. Benton, Little Falls; Alonzo C. Paige, Schenectady; John Townsend, Albany; Lewis Benedict, do.; James Hooker, Poughkeepsie; Thomas W. Olcott, Albany; Marcus T. Reynolds, do.; Gardner G. Howland, New York; J. Philips Phoenix, do.; E. T. T. Martin, Utica; Livingston Spraker, Montgomery county.

Erastus Corning was unanimously re-elected president, and Gardner G. Howland, vice president of the company.

BOSTON AND WORCESTER RAILROAD.

At the annual meeting of the stockholders of the Boston and Worcester Railroad, on Monday afternoon, the following gentlemen were chosen to be directors for the ensuing year: Nathan Hale, David Henshaw, Daniel Denny, Eliphalet Williams, Nathaniel Hammond, John Hathaway, Abraham T. Lowe, Benjamin F. White, Samuel Greele.

A vote passed at a special meeting of the stockholders of the Western Railroad, proposing a union of the two companies, and appointing a committee to confer on the subject with a committee to be appointed by the stockholders of the Boston and Worcester Road was communicated. This vote was referred to a committee of five, who were instructed to investigate the subject—to confer with the committee of the Western Road, and to report on the whole subject at a special meeting of stockholders to be held for the purpose.—[Bost. D. Adv.]

HOUSATONIC RAILROAD.

This road appears to be steadily and at a fair rate increasing its business and income. We shall be truly gratified to chronicle its entire recovery from its embarrassments, as well as its having undergone permanent repairs, so as to become what it should,

and will be, a source of great prosperity to the people of Bridgeport, whose public spirit deserves rich rewards.

The receipts of the Housatonic Railroad were in April, 1844.....\$10,176 37
April, 1845..... 11,650 00

Increase in 1845..... \$1,473 33

The receipts of the road were in
1842.....\$ 92,137 22
1843..... 124,506 38
1844..... 151,538 76

The business of the road thus far in 1845 renders it safe to assume that it will cover expenses and interest upon its debt of 7 per cent., leaving a net balance of 5 per cent. on the capital stock. Eighty-four per cent. of the business is said to be local, or way trade.

CANAL TOLLS.—The total tolls received to the 22d May, have been as follows:

	1844.	1845.
April 18 to May 23, 34 days.		April 15 to May 23, 37 days.
On all canals, \$501,085		\$515,842
Alb'y & W. Troy, (up-freight,) 166,990		156,456

All other offices (on down-freight,) 334,105 359,386

The daily average of the receipts in each year, for the time given, is as follows:

On all canals, \$14,737	\$13,941
On up-freight, 4,911	4,228

On down-freight, 9,826 9,713

This shows that the decrease, equal for the 37 days to \$796 per day, is on up-freight or merchandize, \$683 per day, and on down freight, \$113 per day.—[Albany Argus.]

REDUCTION OF TOLLS.—We learn that at a meeting of the board of the Susquehanna and Tide Water Canal Company on Thursday, the following rates were established as tolls on iron through the canal:

On bar, rolled, slit and hammered iron, and also on nails and spikes,.....	75 cts. pr ton of 2000 lbs.
On castings, blooms and an-chories.....	50 do. do.
On pig iron, scrap and broken castings.....	35 do. do.

—[Baltimore American.]

THE COAL TRADE.—SCHUYLKILL VALLEY.

The demand for coal is increasing, and the red ash dealers are doing an unusually early business.

The business by railroad is still rapidly increasing, the shipments by that avenue, this week, reach 16,748-14 tons.

Sent by railroad from Pottsville and Port

Carbon—total tons.....	74,206-85
From Schuylkill Haven—total tons.....	122,737-20
From Port Clinton.....	1,345-07

Total.....198,289-12

BY CANAL.

From Pottsville and Port Carbon—total.	36,984-65
From Schuylkill Haven—total.....	7,540-14
From Port Clinton—total.....	12,006-46

Total by canal.....56,531-05

Total by railroad.....198,289-12

Total by railroad and canal.....254,820-17

LEHIGH COAL TRADE.

Total shipments from Mauch Chunk. Lehigh coal and navigation co.

Summit mines,.....	36303
Room run do.,.....	10605—46908

Beaver Meadow railroad and coal co.,..... 15264

From Penn Haven—Hazleton coal co.,..... 13286

From Rock Port—Buck Mountain coal co.,..... 4023

79481

WYOMING COAL TRADE—total.....16133

MINEHILL AND SCHUYLKILL HAVEN RAILROAD—total tons.....129,673-05

MOUNT CARBON RAILROAD—total tons..... 76,871

LONG ISLAND RAILROAD ROUTE TO BOSTON.

Passengers by this route leave New York, *South Ferry*, at 8 $\frac{1}{2}$, and the depot at Brooklyn at 8 $\frac{1}{2}$ A. M.; and returning, leave Boston at 6 A. M., for New York, via Norwich and Worcester railroad, daily, Sundays excepted; fare through, \$3 25—in second class cars, \$1 88.

This is certainly a very acceptable reduction, both in time and expense, to those who travel, and must induce many who pass from one city to the other, to take this route; and even travellers from west of Albany, who reach that city before 7 P. M., and desire to go to Boston direct, may now arrive there via New York, and the Long Island railroad, at less expense, and at as early an hour, as by the Western railroad; unless there is a night train from Albany over that road.

This company has overcome many difficulties, in carrying their road through to Greenport; and have some others yet to surmount, none, however, that may not, by a conciliating and liberal course, be gradually removed. But to do this, and make the local business of the Island—which, after all, is to be the greatest source of revenue—contribute its full share to the income of the road, there must be an accommodating spirit towards the inhabitants, and a desire evinced to consult and promote their convenience and interest. There should be at least one daily train through to Greenport; or the Boston train should take up way passengers from all the principal—yes, from all the stations on the line—which might, we should think, be done in less than one hour additional time. It is quite as important for some people to come to the city on Tuesday or Thursday, as for others to come on Monday, or Wednesday, and for others to go from the city on a fishing or hunting excursion, or return home on Mondays, Wednesdays and Fridays, as on Tuesdays, Thursdays and Saturdays, therefore it is the duty—inasmuch as the railroad has driven the stages off the roads—as well as the interest of the company to accommodate them; and they must do it too, or they will have an opposition line of stages on some parts of the Island, to accommodate those people who cannot conveniently go on the alternate days; and if the stages are once started, they will be sustained. And it will be found in this case, as in almost every other, the true interest of the company so to arrange their hours, trains and speed, as to afford the greatest accommodation possible, at the lowest remunerating rates of fare and freight. It is a peculiar feature of railroads, that they create their own business: even where very

little existed before, a brisk business will grow up along their line, and people who never or seldom travelled before, are sure to patronize a railroad, when passing near them, if it is managed on anything like an accommodating or liberal plan; but when their interest and convenience is disregarded, they are not slow to find it out, nor to put counteracting influences in operation.

The completion of the tunnel at Brooklyn has added greatly to the capacity and convenience of doing business at this end of the road; and we now hope to hear from the farmers and others on the line of the road, that the company has made ample and liberal provision for their accommodation—they will do it if they are wise, they must do it if they would succeed and pay good dividends.

We would call the attention of the directors to the following extract from the report of the Dublin and Kingstown railway. It is evidently the true policy to be pursued by the managers of railways from large cities into the agricultural districts. They should "endeavor to create a traffic, and increase it to the greatest extent, by affording to the public the utmost possible accommodation, and at very low rates." Here is the great secret of paying nine per cent. dividend on short roads.

The directors say in their last report, when speaking of the various causes of their eminent success, and which enables them to make a dividend of nine per cent., that

"There is one of those causes so peculiar, that we desire especially to call your attention to it, as it has grown out of that system which you have long since sanctioned, and which, after much discouragement, has led to such gratifying results in the management of our undertaking, namely, that of endeavoring to create a traffic, and to increase it to the greatest extent, by affording to the public the utmost possible accommodation, and at very low rates.

"One great object which we have steadily kept in view, was to encourage permanent residents along all parts of the line and the surrounding neighborhood. We have therefore continued to run the Dalkey trains every half hour, up to 9 o'clock at night, although very few passengers, indeed, have been conveyed after 6 o'clock, P. M., during the winter, and many of the trains have run without a single passenger.

"We are, however, confirmed in our conviction of the soundness of this policy by the preparations which are now being made in the district of Dalkey and Killiney, to which we have alluded, for building operations on a very large scale. It is a striking evidence of the disadvantageous manner in which this traffic has been carried on with reference to the proportion of expenses and income, that the average number of passengers in each carriage has been under four.

"Notwithstanding these apparent discouragements, our confidence is unshaken in the ultimate, complete and entire success of the atmospheric system, and a highly gratifying evidence of the extent to which public attention has been directed to it, has been lately evinced by the appointment of a select committee of the house of commons, consisting of some of the most distinguished members, to enquire into the system."

Now we ask, if such a system has been so exceedingly successful in the vicinity of Dublin, would it not be equally and even more successful in the vicinity of New York and Brooklyn, if adopted and carried out with a spirit of conciliation and mutual interest? Let the attempt be made, and we shall, at no distant day, seldom find Long Island railroad stock in the market—at any price. It will be too valuable to be handled in Wall street often.

THE UNITED STATES MAIL AND THE RAILROADS.

We find the following very just remarks in the United States Gazette, in relation to the complaints of the post office department that the railroad companies are 'monopolies,' and that they are unreasonable in their demands for transporting the mail. It has become quite fashionable for many people to speak of associated enterprizes, or incorporated companies—where more capital is required than usually falls to the lot of one man—as "monopolies;" or that these associations enjoy advantages for which they render no equivalent, and that the people are not equally benefitted by their successful operation. That such remarks should be heard from some quarters is by no means surprising, but that intelligent practical business men should join in them is to us truly astonishing; and especially so in relation to railroads which have done, and are doing so much to facilitate business generally, and especially in the transportation of the mails, but more especially in the economy of time—the poor man's capital—to say nothing about the reduced cost to the traveller. We have sometimes, when listening to, or reading these complaints, asked whether those who made them would be any better pleased if these "monopolies" were to be struck entirely, and at once, out of use!!!

"THE POST OFFICE DEPARTMENT—RAILROAD COMPANIES—JUSTICE AND MONOPOLIES."

"The Union intimates that the postmaster general will correct the evil of which the people in Baltimore and Washington complain, that of stopping the midnight mail from Philadelphia to Baltimore. The Union represents the postmaster general as indignant at the action of the Baltimore and Philadelphia railroad company, and declares that there was an agreement for two mails

a day, and that the full price was paid; and if the company think to extort more, they will be disappointed, as the postmaster general has no authority to add another dollar to the compensation, whatever may be the extra labor performed.

"Now every body knows that there are two mails a day between Baltimore and Philadelphia. One leaves the city at 8 o'clock, A. M., and the other at half past 3 o'clock, P. M. But it seems the postmaster general desired to have another mail at midnight, (not at 10 o'clock, P. M., as the Union says) and the railroad company tried the experiment, but found that passengers would not travel at that hour, and the price for carrying the mail would not pay for running the line. No contract, we imagine, has been broken—no faith violated. The truth is, the department has been, for a long time, managed without that enlarged view of usefulness that once distinguished its administration, and occasionally to achieve a little temporary popularity, in order to hide long existing evils, some sudden scheme of usefulness is broached, some rapid conveyance of the mails, or some unusual facility and multiplication of means. But while the department is planning and seeking to execute these schemes for its own credit, it has no disposition to compensate those who do the extra work; and after exciting expectations, and finding itself unable to continue to gratify them, it hears for a short time the complaints of the disappointed, and then attempts to throw the censure upon railroad companies, that are denounced as monopolists, extortioners, etc. Now let the postmaster general run a mail between any two great cities of the Union, at whatever hour he may say, and he will be sure to find some persons particularly gratified with the arrangements; and if the existing lines are not disturbed, none will complain. But to do this extra work demands extra means. A line of cars, or boats, or stages, between Philadelphia and Baltimore, cannot be run without a considerable expense. When men or departments talk of monopolies, let them think what were the means of conveyance before that monopoly existed. Nay, let the department remember that it is itself a great monopoly, existing to the total suppression, by special statutes, of private enterprise, and that individuals would run a mail from New Orleans to Portland, and take letters and newspapers for half what the department charges. We are not so ignorant as not to know that the department, with all its character of monopoly, is a great good, that it gives sanction and safety, and it supplies the extremities with correspondence. But then we also know, that the monopolies of which that department complains, are of immense, incalculable public benefit; that they convey three times as rapidly, and three times as often, passengers and packages, as could the old means; and, moreover, by their very rapidity, insure the safety which was guaranteed by the establishment of a post office department. We do not care how frequently the mail is conveyed between city and city,

nor does it concern us much at what hour; but we do protest against this habit of the department, of seizing upon the facilities of railroad companies, without regard to the immense cost of construction, and the continued expense of maintenance; and then, if twice the service agreed on is not performed, appealing to popular prejudice against monopolies, and sustaining itself by the silence of those who are indifferent, the clamor of those who are only concerned in the results, without being interested in, or caring for the means by which the end is obtained."

THE SUSPENSION AQUEDUCT.

We take the following account of the suspension aqueduct, over the Allegheny river at Pittsburgh, from the Baltimore American, because we do not receive the Pittsburgh Gazette, in which it was first published, and because we have not, as we had reason to expect, received a full description from the gentleman who has been so fortunate as to complete the work, in a manner so satisfactory to those interested and to be benefitted by his efforts. The American says, that

"This important and novel work, by which the Pennsylvania canal is carried over the Allegheny river from the city of Allegheny to that of Pittsburgh, is at length completed and about to be brought into use. We find the following account of this bold enterprise in the Pittsburgh Gazette of Saturday:"

The new structure is the only one of the kind in the United States, and, we believe, in the world. After many attempts had been made to repair the rickety old concern, the city (the canal commissioners refusing to do it) concluded to rebuild, and issued proposals limiting the cost to \$62,000; it being considered that the old piers and abutments with some repairs were nearly as good as new. A number of models were sent in, and after a long and laborious examination, that of Mr. John A. Roebling was adopted, and the present splendid monument of his genius is the result. We have taken the liberty of extracting a minute account of it from the appendix to Dr. Upfold's lecture before the Philomathean Literary Institute. This, we infer from its particularity, is from the pen of Mr. R. himself.

"The wire suspension aqueduct consists of seven spans, of about 160 feet each from centre to centre—supported by six piers of solid mason work and two abutments. The trunk is of wood, 14 feet wide at the bottom, and 16½ feet at the top, with its sides 8½ feet deep, conveying an average depth of 3½ feet of water. The sides and bottom are formed of a double course of 2½ inch plank, laid diagonally, the two courses crossing each other at right angles so as to form a solid lattice work of great strength and stiffness, sufficient to bear its own weight and resist the effects of the most violent storms. The whole of this trunk, with towing and foot paths at the sides, is supported, in addition, on strong beams placed transversely to its sides, and arranged in pairs at a distance of

four feet apart; each pair of beams is sustained by two suspension rods of iron, shaped like stirrups, and mounted on small cast iron saddles resting on the wire cables, which form reversed arches from pier to pier; and where the cables are strongly inclined, or dip considerably, the small saddles are prevented from slipping by connecting rods, the first of which is attached to the saddle.—There are but two cables, of 7 inches diameter each, suspended at the two sides of the wooden trunk. Each cable consists of 1900 lengths of wire of ¼ of an inch thick, and possesses an aggregate strength of over two millions of pounds.

"The two cables together are competent to sustain a weight of more than 2000 tons. The oxidation of the cables is prevented by durable varnish applied to each separate wire, in addition to which they are protected by a solid wrapping of annealed wire, well painted. The cables do not extend under ground. Their extremities connect with chains which pass under ground, and are anchored to large metal plates, covered with heavy masses of masonry, the weight of which resists any pressure of the chains. The chains are made of the best boiler scrap iron, each bar being forged in one piece without a weld. The links composing the chains average four inches, by one and a half inch, and are from four to twelve feet long. All the masonry forming the anchorage has been laid in cement and mortar, and the iron is embedded in cement. The preservation of the chains under-ground is rendered certain by the known property of lime and cement to prevent oxidation. If moisture should find its way to the chains, it will be saturated with lime, and add another calcareous coating to the iron. On the piers and abutments, the cables rest on cast iron saddles. The size of the cable is increased at the saddles in two points, by introducing a number of short wires. Swells are thus formed, which fit into corresponding recesses of the casting. The cable is then pressed down by three sets of strong wedges, which are driven through corresponding openings in the sides of the saddle. By this provision the cables are firmly connected with the saddles and prevented from slipping.

"The following table will show the principal weights and dimensions of the structure:

Length of trunk of the aqueduct,	1,140 ft.
" " cables,	1,175 ft.
Aggregate length of cable & chains,	1,283 ft.
Diameter of cables,	7 in.
Weight of both cables,	110 tons.
Total weight of water in aqueduct,	1764 tons.
Do. do. do. in one span,	252 tons.
Weight of one span including all,	380 tons.

"We hear it said that he has made little or nothing by the contract; however this may be, he has erected a work which will secure him a high reputation, and eventually, an ample return in a pecuniary sense.—His next contract is for the Monongahela bridge, which is also to be on the wire suspension plan, and we hope he may have 'room and verge enough' to construct a handsome thoroughfare across that stream."

We find in the Tribune the following statement:

NEW YORK AND ERIE RAILROAD.

"The following statements in relation to the cost of this road, its connection with tributary works, and its probable productiveness, are prepared for the information of those who may become subscribers to the capital stock.

I. OF THE COST OF THE WORK.

The cost of a single track, with heavy rails, from the Hudson to lake Erie, the State loan being relinquished, will be represented by.....\$8,100,000
 Stock of comp'y heretofore issued 1,500,000
 Existing debt..... 600,000
 Subscriptions to be added to stock 3,000,000
 Bonds to be issued for.....3,000,000

Estimate for outfit of engines, cars and other furniture.....\$8,100,000
1,000,000

Total.....9,100,000
 Equal to \$20,200 per mile, the length being 450 miles.

If under the provisions of the recent law, the old stock should be exchanged for new, then this sum of.....\$9,100,000 would be subject to a reduction of about. 750,000

In which case the road would stand the stockholders in.....8,350,000 or \$18,500 per mile

Cost as compared with other important and productive railroads, with heavy rails and adapted both to the transport of tonnage and passengers:

	Length.	Cost per mile.
1. Camden and Amboy railroad, 61 miles.	61	\$52,458
2. Boston and Worcester do. 44 do.	44	66,229
3. Worcester and Albany do. 156 do.	156	49,270
4. Norwich and Worcester do. 66 do.	66	32,826
5. New Jersey do. 34 do.	34	60,000
6. Reading do. 94 do.	94	100,600
7. Baltimore and Ohio do. 188 do.	188	40,550
8. Baltimore and Wash. do. 38 do.	38	47,368
8. Balt. and Susquehanna do. 50 do.	50	51,724

Of these the two first mentioned, and the Reading, have a double track.—The average cost per mile of the whole of these together is \$55,600.

The line of roads extending from Albany to Buffalo, as stated in the comptroller's late report, cost an average of \$30,700 per mile, though, excepting the first 16 miles, furnished only with flat bars.

It is apparent, therefore, that to the stockholders, the cost per mile of this road will be less than half that of the principal works of similar character.—Even those in the above list which have but a single track, making together over 500 miles, cost on an average but a trifle less than \$42,000 per mile.

The cost of this work, including the proceeds of the state loan, and the whole amount of the old stock, will not exceed \$26,000 per mile, completed and furnished.

If to this be added a reasonable estimate of the lands gratuitously ceded for the roadway, and for stations, depots, and other purposes, equal to at least \$2500 per mile, the total value of the investment is equal to \$28,500 per mile, or 40 per cent more than its cost to the stockholders at \$20,200 per mile as first stated, and over 50 per cent. more than its cost at \$18,500 per mile, as stated in case of a reduction of the old stock.

This statement may reasonably satisfy those who have imbibed erroneous impressions upon the subject, that the funds heretofore employed in the construction of this work have not been squandered, or improvidently applied.

A statement derived from official documents, of the prices paid on several important public works in progress at the same time in this and adjoining states, conclusively shows that the prices paid on this work were lower than on those works by a per centage varying from 25 to 80, and in some items even more.

Those who are intimately acquainted with the facts as to what has been done, the character of the work performed, and the prices paid, have no hesitation in challenging a comparison of this with other works, and believe it may be safely affirmed that no similar amount of expenditure on other public works has produced an equal amount or value of results.

The cost of the eastern division of the road from Piermont to Goshen was \$29,000 per mile, that is, exclusive of the outfit and of the pier, docks, &c., which are constructed not for this division merely, but for the whole road, and cost about \$220,000.

II.—IN RELATION TO THE PRODUCTIVENESS OF THE WORK WHEN COMPLETED.

It may be advantageously compared with the railway extending from Boston to Worcester, and thence to Albany, 200 miles, which together cost an aggregate of \$10,600,280, averaging a trifle more than \$53,000 per mile. The rails are of heavy iron, and there is a double track from Boston to Worcester, nearly one-fourth of the whole distance.

The net earnings of the entire line in 1844 amounted to.....\$634,842
 Equal within a fraction to 6 per cent. on the entire cost. The net income per mile averaged.....3,174

Supposing the business on this road should only be equal in proportion to its length to that on the Boston and Albany line last year, yielding \$3,174 per mile, the result would be of net receipts \$1,428,300, which is over 17 per cent. on \$8,350,000, the cost in round numbers of this work, with its fixtures and equipment at \$18,500 per mile.

If the addition of a double track on this road for a like proportion of the distance, as on that from Boston to Albany, be allowed for at the rate of \$10,000 per mile, amounting to about \$850,000, and making the total cost as above stated, \$9,200,000; then the net earnings as above stated, would be equal to 15½ per cent.

But since the cost of this work to the company as stated, viz: \$8,350,000, comprises
 Of existing debt.....\$600,000
 Bonds to be issued.....3,000,000
 Stock for the construction....\$3,000,000
 For outfit.....1,000,000
 Old stock.....750,000—4,750,000
 8,350,000

It results that the net income as above supposed, viz:.....1,428,300 will pay 6 per cent on the bonds and debt, amounting yearly to.....216,000
 and leave a balance of.....1,212,300 equal to 25½ per cent. (\$1,211,250) on 4,750,000 of stock.

If, therefore, the business of the road should, in proportion to its length, or in other words, if the net earnings per mile

should only be equal to the average net earnings of the road from Albany to Boston, the results would be as above stated.

The late Board estimated the annual net earnings at \$1,343,500, about 1 per cent. on the cost less than the result of the above comparison with the line from Albany to Boston. They, however, allowed nothing for any probable increase of inhabitants, products, or business, on the route during the time to elapse before the completion of the work, or for travel and traffic to and from the lakes, or for transporting the mails. They also guardedly avoided allowing all the advantage which is likely to result in respect to profits from the great length of the road.

The following works, tributary to this road, are in contemplation or completed:

Character of the work.	Length of intersection in miles.	Distance of point from this city.
1. R. R. from Albany to some point near Goshen.	90	65 miles.
2. Do. Utica to Binghamton.	85	200 "
3. Do. Ithaca, connecting with Cayuga lake.	38	250 "
4. Do. Blossburg to Corning.	40	320 "
5. Do. Canadagua " "	75	320 "
6. Do. Buffalo to Hornellsville.	85	340 "
7. Chenango canal.	97	320 "
8. Chemung & C. Lake canal.	100	320 "
9. Genesee Valley canal.	120	400 "

Total length of these tributaries.....750
 Aggregate distance on this road.....2,500 "

Besides the above, other branches are in contemplation, and likely, at no distant period, to be undertaken, sufficient to extend the lines of tributaries to 900 miles, or double the length of the main trunk, and the number of miles of this work to be passed over by them to more than 3000.

A glance at this statement cannot fail to produce conviction that the business of the main trunk, both in passengers and tonnage, must be greatly augmented by the intersecting railways and canals referred to, and especially in the case of the railways in the winter.

Let any one consider the probable yearly travel and traffic to and from Buffalo, passing, including the distance between this city and Piermont, 340 miles, on this road; and add to it that from Canandaigua, 320 miles, that from Ithaca and the steamboat route on Cayuga Lake 250 miles, and that from Utica 200 miles, and consider what proportion of the business which is to support these roads, and make them profitable as independent works, is thus to pass over this main trunk 3, 4, or 5 times as many miles as on them, and he must conclude that they will very essentially augment the profits of this work.

THE PROPERTY OF THE COMPANY CONSISTS OF

64 miles of Railway finished, viz.:
 53 miles in operation from Piermont to Middletown.

7 miles double track at the western termination, from which the rails have been removed.

4 miles single track near Corning.

Pier, docks, machine shop, &c., at Piermont.

177 miles of roadway ready for superstructure, on about half of which the bridges are complete.

40 miles nearly prepared for the superstructure, and other portions commenced.

Timber for 250 miles of superstructure, and a large quantity of timber for piles, cross ties, bridges, &c.

The right of way for 325 miles of the road, and grants of land for the most important depots and stations.

Permanent settlements with the owners of adjoining lands for erecting and forever maintaining the fences on 220 miles of the road.

Surveys, maps, &c., of the whole line of the road, and final locations of 350 miles.

Locomotives, cars, &c., on 53 miles.

Pile driving machines, earth cars, engines, tools, and stock in machine shop, chairs, and other castings.

Cost under the present laws, \$1,350,000.

The net income of the eastern division for the current year is estimated at \$60,000.

It is sometimes amusing to read the arguments, or assigned reasons, in railroad controversies, for and against particular routes. The advantages of railroads are now so highly estimated, that it sometimes occurs that very candid and honorable men allow their fancy or their interest to place themselves or their rivals in an awkward or ridiculous light. Standing, as we do, in a position uninfluenced by local projects—looking, as we desire, and intend, upon every individual work as a link in a vast system—we are often amused by the controversies carried on between parties interested in rival lines. The following extract from a long communication in the Rutland Herald, signed "Mount Holly Gap," is of this class:—

Vermont Railroad.—The arguments used in Western Vermont in favor of the route, via Mount Holly Gap, are—

1st. That it would open to the Boston market a section of country bordering on Otter Creek, that now do their business at New York.

2d. That Western Vermont abounds in iron, marble, slate, manganese, and other articles not found on the central route.

3d. The population is greater to the square mile, on the western side of the mountains, than on the east. And that the grand list of the western counties is larger in proportion to the population and extent of territory, than that of the counties bordering on the central route.

4th. With the exception of the towns of Ludlow and Mount Holly, the whole line of the western route is seldom covered with snow more than six inches deep, while the whole line of the central route (which is twenty-eight miles longer than the western)

is generally at an average of four feet deep, and remains, as a matter of course, longer on the ground than on the western route.

The logic of the Vermont Watchman, in favor of the central route, would be, 1st, The road would pass in sight of a splendid State House, surrounded by lofty mountains, which render the scenery picturesque, awfully grand, and sublime. 2d. That the central route is peculiarly adapted to applying the motive power to runners on the bob-sled principle, thus avoiding the necessity of purchasing that expensive item in the construction of ordinary railroads, railroad iron at the present high prices. 3d. That the curves on the central route, like the Mississippi river, winding to all points of the compass, like *traverse sailing* on the ocean, would facilitate the onward course in a *head wind*; while with adverse winds, no alternative would be left, but to pull the *tap* at Rutland, run to the quarantine ground at New-York, via Whitehall and Saratoga, and there to ride until the Boston health officer arrived with a certificate of *All Well*. * * *

We can assure those interested in these apparently rival routes, that it is hardly worth their while to expend their ammunition in efforts to disparage either—as they will ere long be convinced that both routes are exceedingly favorable for a railroad, and that both are sure to be built within a very few years. There cannot, it seems to us, be a doubt in the mind of any well-informed man, that there will be a railroad from Boston to Burlington, via Rutland. It will be seen on referring to the map, that a road via Rutland encloses a large section of the most productive part of New England, which now trades with New York. Is it to be supposed that Boston will leave this rich field out of her fold when she is cutting the ditches and erecting the barriers to turn the current of business to her doors? Not so, rest assured: therefore this line will receive largely of her liberal aid—even if the central route is not built; but it *will* be built—and Boston will also contribute liberally to its construction, because it will be a good investment—as it will open a region of country, not only rich in agricultural products, but possessing vast manufacturing resources, which has been always tributary to her.—We have not a doubt of the construction of both lines.

The construction of both these lines, however, will not secure to Boston the whole trade of that region, by a long way—as the Trojans, and the people south of Rutland, in the direction of Troy, will build a railroad to connect the New York and Albany Railroad,—or more properly the New York and Troy road, as it will actually terminate at Troy instead of Albany—at Rutland, with

the Boston and Burlington road, thus giving a choice of markets.

It may be said by some, that we are wild in our views, and visionary in our anticipations. Well, then, let it be so said—that will not prevent the rapid extension of the system, nor the construction of lines of railroad over natural routes, any more than the disbelief of many intelligent men in this city and state prevented the construction of the Erie and Champlain canals.

NON-REDUCTION OF FARE ON THE RAILROAD BETWEEN WASHINGTON AND BALTIMORE.—We have noticed for some time past intimations through the press, that, contrary to general and reasonable expectation on the part of the travelling public, the Directors of the Baltimore and Ohio Railroad Company have determined *not* to reduce the fare of \$2 50 per passenger, now charged to travellers on the Baltimore and Washington branch. Having made some inquiry upon this subject—one of great interest to the travelling public—we regret to learn, from a source entitled to respect, that, although there has not yet been any action by the Board of Directors, it is thought there will be no reduction of the fare between Washington and Baltimore. Now this, we take leave to say, will be not only a sore disappointment to the community, but a public grievance, the rate being now so much above all other rates of travelling by railroad in various parts of the Union. It is a fact, that persons can now travel from New York to Boston for \$3; and we have lately seen it advertised that persons may travel from New York to Montreal for a like sum! Now, it is most unreasonable as well as impolitic, on the part of the Washington and Baltimore Railroad Company, so we conceive, that they should charge so much higher than the rest; and we still indulge the hope that the Directors will make the expected reduction to take effect from the first of June. If this be not done, the Railroad Company may expect that travelling by the cars between this city and Baltimore will greatly fall off, and that an impetus will be given to the excellent line of stages now running between the two cities, which will place them on a permanent and sure basis.

PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y. The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Ewing, Philadelphia; Wm. E. Coffin & Co., Boston.

PROGRESS OF RAILWAYS.

The following remarks in relation to the Chester and Birkenhead railway will apply equally well to almost every railroad, either in this country or in England; and we know of no better mode of illustrating their steady advance than by giving similar statements of their comparative receipts during certain periods of each succeeding year.

"Nothing can be more conclusive," says the editor, "of the steady advance of railways, and the increasing favor which they meet from the public, than an unbiased review of their relative receipts for merchandise and passengers, during two or more distinct periods. As the census of a nation portrays at once its progress or decline, and the wealth of its commerce, as either enhanced or depreciated, so the statistics of a national undertaking may fairly be consulted as a criterion of its success. It is in taking the comparative increase of our several lines that we have, from time to time, presented a cheering account of the present position and future favorable prospects of railways generally, and we now furnish a few succinct and plain statements, respecting the progress of one line, not in itself of any great importance, as connected with enormous traffic, or immense through communication, but one of the minor projects, whose revenues are unaided by any impulse, but that of steady and sterling utility, and, therefore, a more satisfactory test of the general value of similar undertakings. The Chester and Birkenhead railway has a total number of 16,500 shares, 5,000 being original, at a price of 50*l.*, and issued at par; 5,000 half-shares at 25*l.* each, issued at 20*l.*; and 6,500 new 50*l.* shares, issued at 17*l.* The first are now in the market, at somewhat a shade better than par; the second at a premium of 4*l.*, and the last are quoted at no less than 44*l.* We will now consider how far the success of the undertaking has hitherto warranted this favorable quotation.—From the 1st of January to the 30th June, 1843, the number of passengers on the line had been 99,782, paying an amount of 9915*l.* 19*s.* 9*d.* From the 1st January to the 30th June, 1844, the number of passengers had been 126,055, and the amount paid by them 11,341*l.* 5*s.* 7*d.*, being an increase in the six months of 25,273 passengers, and 1425*l.* 5*s.* 10*d.* During the latter period the capital account presented an amount of disbursements of no less than 518,989*l.*, including 135,792*l.* for land and compensation, 209,957*l.* for works on roads, and nearly 200,000*l.* for parliamentary, law, and engineering expenses; while the revenue account showed a further disbursement of 5732*l.* 9*s.* 8*d.* for various incidental expenses. To meet these heavy preliminary demands, 514,585*l.* 18*s.* was raised by calls on the three several classes of shares, by mortgages, premiums, and loans, and a deduction of 21,318*l.* 5*s.* being made from the debt account for the sale of lands, and materials, and for the discharge of a turnpike bond, the original expenditure was reduced to 497,671*l.*

9*s.* 4*d.*—leaving 16,914*l.* 8*s.* 8*d.* in favor of the company on the capital account, and 4515*l.* 16*s.* 6*d.* on the revenue account.—Out of this a dividend was declared of 8*s.* 6*d.* per 50*l.* share, and 4*s.* 3*d.* per 25*l.* share; but 5*s.* 3*d.* being due on each of the new 50*l.* shares, the amount paid was only 3*s.* 3*d.* per share, requiring a sum of 4406*l.* 5*s.* which, deducted from the surplus, left a balance in hand of 1109*l.* 11*s.* 6*d.* Such was the position of the company on the 30th of June, 1844, having for the half-year then first ended, carried 126,055 passengers, receiving an amount of 11,341*l.* From that date to the 30th of January, 1845, the number of passengers had been 147,618½, being an increase of 21,563½, and an amount of 13,019*l.* 9*s.* 2*d.*; being also an increase of nearly 2000*l.* The merchandise for that half-year had realized 1684*l.* 1*s.* 6*d.* and the mails, 406*l.* 7*s.*, presenting a total receipt of 15,109*l.* 17*s.* 8*d.* For the corresponding period in 1843, the number of passengers had been 121,240, the amount for them 11,094*l.* 8*s.* 6*d.*; merchandise, 1164*l.* 11*s.* 11*d.*; mails, 283*l.* 9*s.* 6*d.*—in all, 12,442*l.* 9*s.* 11*d.*—showing an increase in favor of the succeeding half-year of 26,387 passengers, and 1925*l.* 0*s.* 8*d.* the amount they paid, 519*l.* 9*s.* 7*d.* for merchandise, 122*l.* 17*s.* 6*d.* for mails, and 2567*l.* 7*s.* 9*d.* on the total receipts. To the amount of 15,109*l.* 17*s.* 8*d.*, is also to be added 81*l.* 3*s.* 5*d.* for rents, etc.; giving a gross receipt of 15,191*l.* 1*s.* 1*d.*, while the expenses being only 8238*l.* 18*s.* 7*d.*, presented, with the balance of the preceding half-year, a surplus of 7833*l.* 3*s.* 8*d.* in favor of the company. Of this balance, 5906*l.* 6*s.* has been allotted for the payment of interest, being at the rate of 10*s.* per 50*l.* share and 5*s.* per 25*l.* share. We have now given these statistics in detail, because they present a very useful illustration of the advantages of the system, as contrasted with its preliminary difficulties, eventually overcoming them, and gradually, but steadily and satisfactorily, evidencing prospects of permanent future success.—*Mining Journal.*

HEATING BUILDINGS WITH HOT WATER.

We take it for granted that every one—even railway proprietors, have an interest in all improvements designed to render dwellings or other buildings comfortable in winter—although to economise fuel may reduce transportation on some of our railroads; therefore we give place to the following description of an improvement in the apparatus for heating buildings with hot water, by Benjamin Blaney, Boston, Mass.:

This is for an improvement in the method of heating air for heating buildings, by the circulation of hot water through a series of tubes in a hot air chamber. The patentee says—"My apparatus consists in part, of a furnace and a vertical boiler. To the upper part of this boiler is attached a box, which I denominate a water trap, said water trap being intended to receive the water which, by its ebullition, is caused to flow into it from the boiler. From the bottom

of the water trap, the heated water passes along and ascends through a series of recurved pipes, contained in an air-heating chamber, and from the lower part of these it again passes into the lower end of the boiler, and is thus kept constantly circulating while ever a fire is maintained in the furnace. The whole apparatus is to be contained within a suitable chamber, made perfectly close, excepting where provision is made for giving access to the furnace, and the opening, or openings made for the admission of the air from without, which is to be heated, for the purpose of being conveyed through tubes into the apartments to be warmed."

Claim—"What I claim therein as new, is the manner in which I have connected the boiler with the series of tubes or pipes, through which the heated water is to circulate, by combining therewith a box or vessel, which I denominate a water trap, into which the boiling water is to pass, in consequence of its ebullition, and through which, as well as through the tubes connected therewith, and through the boiler, said water is to circulate for the purpose and substantially in the manner set forth."—*Jour. Frank. Ins.*

W. R. CASEY, CIVIL ENGINEER, NO. 23 Chambers street, New York, will make surveys, estimates of cost and reports for railways, canals, roads, docks, wharves, dams and bridges of every description, with plans and specifications. He will also act as agent for the sale or purchase of machinery, and of patent rights for improvements relating to public works.

TO RAILROAD COMPANIES AND MANUFACTURERS of railroad Machinery. The subscribers have for sale Am. and English bar iron, of all sizes; English blister, cast, shear and spring steel; Juniata rods; car axles, made of double refined iron; sheet and boiler iron, cut to pattern; tiers for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside. **THOMAS & EDMUND GEORGE,** ja45 N. E. cor. 12th and Market sts., Philad., Pa.

PATENT RAILROAD, SHIP AND DOCK Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. York, will be punctually attended to.

HENRY BURDEN, Agent. Spikes are kept for sale, at Factory Prices, by I. & J. Townsend, Albany, and the principal Iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Japviers, Baltimore; Degrand & Smith, Boston.

* * * Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand. ja45

NEW JERSEY RAILROAD AND TRANSPORTATION COMPANY.

Length of Road, 33 96-100 miles.

Capital, \$2,000,000.

JOHN S. DARCY, Esq., President.

ROBERT SCHUYLER, Esq., Vice President.

J. P. JACKSON, Esq., Secretary.

J. WORTHINGTON, Esq., Treasurer.

Leave New York, foot of Courtland street.	DAILY.		SUNDAY.	
	A. M.	P. M.	A. M.	P. M.
For Newark.....	9, 11, 12.....	2, 3, 4 3-4, 6, 7 1-2	9.....	4 3-4
" Elizabethtown.....	9, 11.....	2, 3, 4 3-4, 6.....	.....	.....
" Rahway.....	9, 11.....	3, 4 3-4, 6.....	.....	.....
" New Brunswick.....	9.....	3, 4 3-4.....	.....	.....
Leave New Brunswick.....	6, 7 1-2, 11 1-2.....	8 3-4.....	11 1-2	8 1-2
Rahway.....	6 3-4, 7, 8 1-4, 12.....	4 3-4, 9 1-4.....	.....	.....
Elizabethtown.....	7, 7 1-2, 8 1-2, 10 1-2, 12	3 1-2, 5.....	.....	.....
Newark.....	7 1-2, 8 1-4, 9, 11.....	11-2, 4, 5 1-2, 7, 9 3-4	11 3-4	9 3-4

For New York.

9 A. M. and 3 P. M. to meet the Morris and Essex trains, and 9 A. M. and 4 3-4 P. M. to meet the Somerville train, and for Philadelphia.

TABLE OF DISTANCES AND FARES.

	New York.		Newark.		Elizabethtown.		Rahway.		N. Brunswick	
	Miles.	Cents.	Miles.	Cents.	Miles.	Cents.	Miles.	Cents.	Miles.	Cents.
New York.....	.....	.....	9 1-4	25	14 1-2	31 1-4	19 3-4	31 1-4	31 1-2	50
Newark.....	9 1-4	25	.....	.....	5 1-2	12 1-2	10 1-2	25	22 1-2	50
Elizabethtown.....	14 1-2	31 1-4	5 1-2	12 1-2	.....	.....	5	12 1-2	16 3-4	50
Rahway.....	19 3-4	31 1-4	10 1-2	25	5	12 1-2	.....	.....	11 3-4	37 1-2
New Brunswick.....	31 1-2	50	22 1-2	50	16 3-4	50	11 3-4	37 1-2	.....	.....

FRENCH AND BAIRD'S PATENT SPARK ARRESTER.

TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved SPARK ARRESTER, recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both passenger and freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits:

E. A. Stevens, President Camden and Amboy Railroad Company; Richard Peters, Superintendent Georgia Railroad, Augusta, Ga.; G. A. Nicolls, Superintendent Philadelphia, Reading and Pottsville Railroad, Reading, Pa.; W. E. Morris, President Philadelphia, Germantown and Norristown Railroad Company, Philadelphia; E. B. Dudley, President W. and R. Railroad Company, Wilmington, N. C.; Col. James Gadsden, President S. C. and C. Railroad Company, Charleston, S. C.; W. C. Walker, Agent Vicksburgh and Jackson Railroad, Vicksburgh, Miss.; R. S. Van Rensselaer, Engineer and Sup't Hartford and New Haven Railroad; W. R. M'Kee, Sup't Lexington and Ohio Railroad, Lexington, Ky.; T. L. Smith, Sup't New Jersey Railroad Trans. Co.; J. Elliott, Sup't Motive Power Philadelphia and Wilmington Railroad, Wilmington, Del.; J. O. Sterns, Sup't Elizabethtown and Somerville Railroad; R. R. Cuyler, President Central Railroad Company, Savannah, Ga.; J. D. Gray, Sup't Macon Railroad, Macon, Ga.; J. H. Cleveland, Sup't Southern Railroad, Monroe, Mich.; M. F. Chittenden, Sup't M. P. Central Railroad, Detroit, Mich.; G. B. Fisk, President Long Island Railroad, Brooklyn.

Orders for these Chimneys and Arresters, addressed to the subscribers, or to Messrs. Baldwin & Whitney, of this city, will be promptly executed.

N. B.—The subscribers will dispose of single rights, or rights for one or more States, on reasonable terms.

♦♦ The letters in the figures refer to the article given in the Journal of June, 1844.

SAMUEL NOTT, CIVIL ENGINEER, Surveyor and General Agent, Bangor, Me. Railroads, Common Roads, Canal, Factory and Mill Sites, Towns, Farms, Wild Land, etc., surveyed. Plans and Estimates for Buildings, Bridges, etc., prepared, and all appertaining business executed.

—REFERENCES.—

Boston, { Col. James F. Baldwin, Civil Engineer.
Col. J. M. Fessenden, " "
Wm. Parker, Esq., Engineer and Superintendent
Boston and Worcester railroad.

SPRING STEEL FOR LOCOMOTIVES, Tenders and Cars. The Subscriber is engaged in manufacturing Spring Steel from 1 1/2 to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

JOAN F. WINSLOW, Agent,

ja45 Albany Iron and Nail Works, Troy, N. Y.

FOR SALE, AT A SACRIFICE—A LOCOMOTIVE Engine, 4 wheels and Tender. Cylinders 10 in. dia., Stroke 16 in., Cylinders inside of smoke box. Weight of engine, with wood and water, about 9 tons. This engine and tender are new, and of the best materials and workmanship. If required, would be altered to a 6 wheeled engine.

Also, 1 20-horse High Pressure Steam Engine.

3 8-horse " " " "

1 Upright Hydraulic Press.

All of which will be sold low, on application to

T. W. & R. C. SMITH.

Founders and Machinists,

May 12th Alexandria, D. C.

RAILROAD IRON AND FIXTURES. THE Subscribers are ready to execute orders for the above, or to contract therefor, at a fixed price, delivered in the United States.

DAVIS, BROOKS & CO.,

ja45 21 Broad st., N. York.

MACHINE WORKS OF ROGERS, KETCHUM & GROSVENOR, PATTERSON, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR, ja45 Paterson, N. J., or 60 Wall street, N. York.

NICOLL'S PATENT SAFETY SWITCH for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

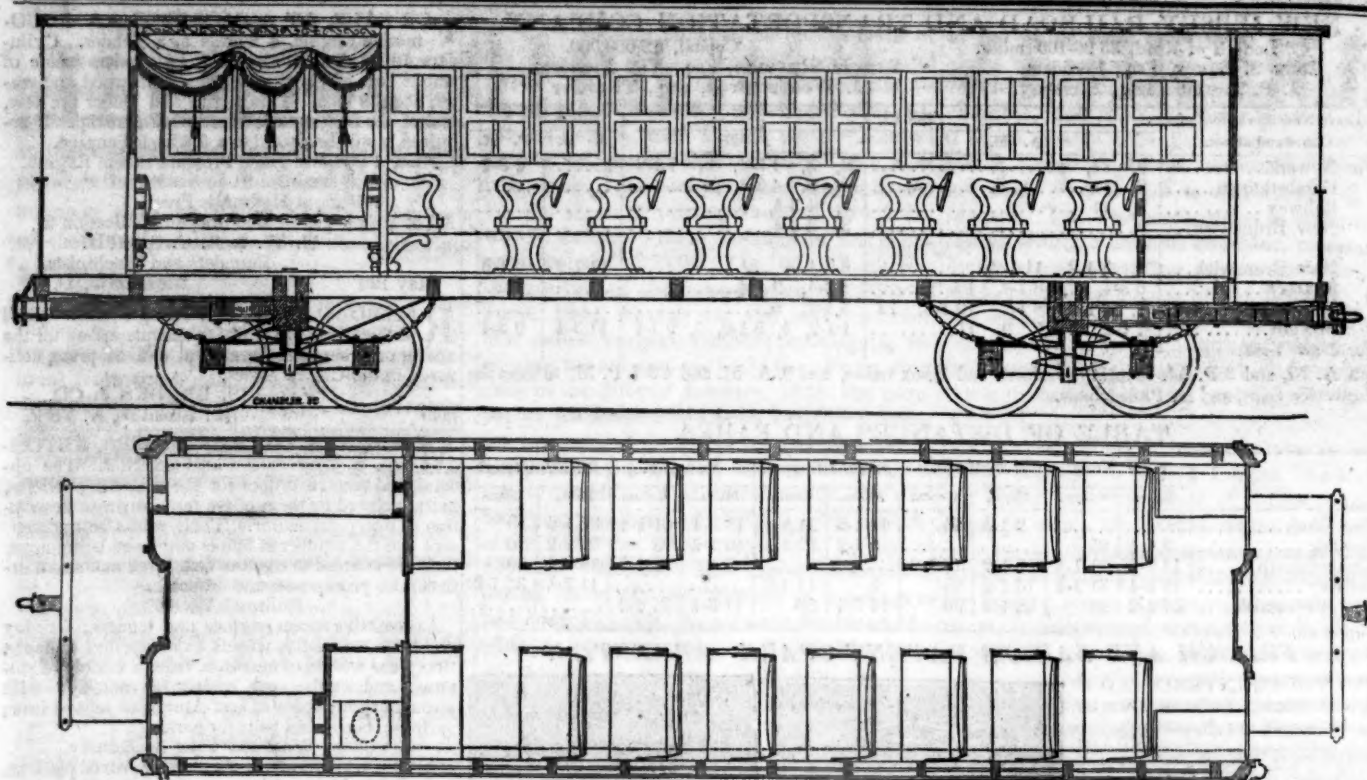
It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee. G. A. NICOLLS, ja45 Reading, Pa.

GEORGE VAIL & CO., SPEEDWELL IRON Works, Morristown, Morris Co., N. J.—Manufacturers of Railroad Machinery; Wrought Iron Tires, made from the best iron, either hammered or rolled, from 1 1/2 in. to 2 1/2 in. thick.—bored and turned outside if required. Railroad Companies wishing to order, will please give the exact inside diameter, or circumference, to which they wish the Tires made, and they may rely upon being served according to order, and also punctually, as a large quantity of the straight bar is kept constantly on hand.—Crank Axles, made from the best refined iron; Straight Axles, for Outside Connection Engines; Wrought Iron Engine and Truck Frames; Railroad Jack Screws; Railroad Pumping and Sawing Machines, to be driven by the Locomotive; Stationary Steam Engines; Wrought Iron work for Steamboats, and Shafting of any size; Grist Mill, Saw Mill and Paper Mill Machinery; Mill Gearing and Mill Wright work of all kinds; Steam Saw Mills of simple and economical construction, and very effective iron and Brass Castings of all descriptions.

ja45



DAVENPORT & BRIDGES CONTINUE TO MANUFACTURE TO ORDER, AT THEIR WORKS, IN CAMBRIDGEPORT, MASS. Passenger and Freight Cars of every description, and of the most improved pattern. They also furnish Snow Ploughs and Chilled Wheels of any pattern and size. Forged Axles, Springs, Boxes and Bolts for Cars at the lowest prices. All orders punctually executed and forwarded to any part of the country. Our Works are within fifteen minutes ride from State street, Boston—coaches pass every fifteen minutes.

Fig. 1.

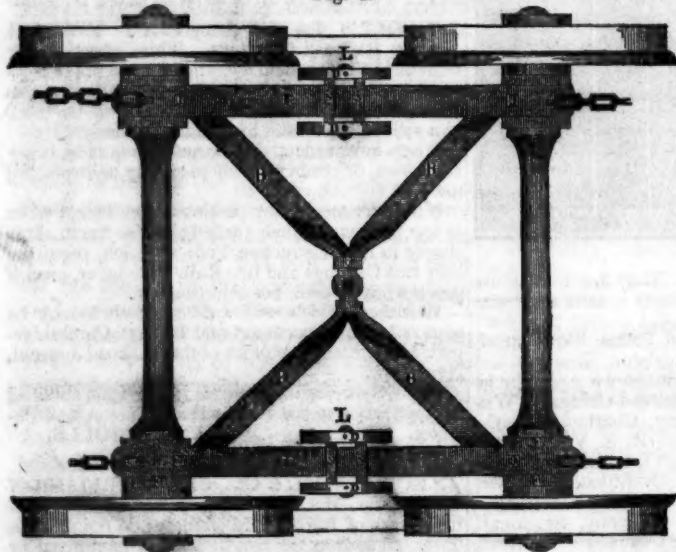
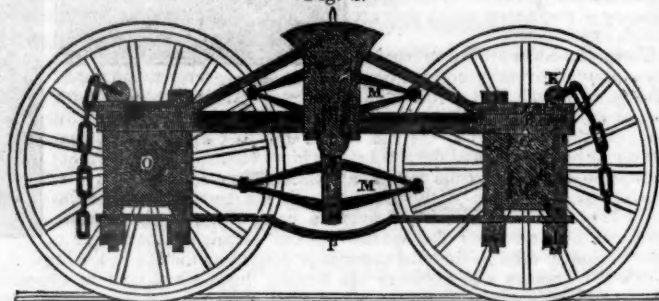


Fig. 2.



DAVENPORT & BRIDGES' IMPROVED PATENT IRON TRUCK FOR RAILROAD CARS, is presented above, and the attention of Railroad Companies is respectfully invited to the following description of their justly-celebrated invention:

Fig. 1 of the drawing above represents a top view or plan of our Improved Railroad Truck. Fig. 2 is a central, longitudinal, and vertical section. C, Fig. 1 and 2, represents the arched bars of the side trusses: they consist of two long bars of plate iron (about three inches wide by seven-eighths of an inch thick,) bent into the shape as seen in drawing 2. Each of them is placed directly over a flat and straight tie bar, A, which extends from one end to the other, as seen in Fig. 2. These parts, so arranged, receive between their ends the ends of diagonal cross bars or braces, B, which are united at their centres upon four pedestals, F, F, which receive the bearings or boxes for the axles to run on. Another flat tie bar, P, extends from the under side of one of the pedestals to that of the other, on the same side of the frame, and the whole is secured together by eight bolts, J, J, passing down through the ends of the several bars, A, B, C, and the pedestals, and on each side of the journals of the axles, O, O, in the positions represented in the drawings. From the above it will be seen that there are two bolts to each pedestal, and that this number is all that is requisite for the full security of the bars and pedestals together. The body rests and moves upon two sectional supports, D D, arranged on the sides of the truss frames, as seen in Fig. 2; they extend somewhat, or a sufficient distance above the truss frames, and are jointed at their lower ends by means of a bolt, L, which rests upon the top of the lower spring, M, which spring rests upon a bolt passing through the lower part of the inverted strap, E, which strap passes over and rests upon the top part of the upper spring, M, which is placed within the truss frame, and rests upon the top of the bar, A.

Two bands, N, N, are passed entirely around the central part of each truss frame, the object of the same being to transfer the strain, or a portion thereof, of the spring, from the tie bar, A, to the arched bar, C.

These Trucks are adapted as well for eight-wheeled passenger cars as for baggage and freight cars, giving to each a more agreeable and easy motion than any other Truck heretofore constructed or in use. They are simple in their construction, combining strength and great durability, although weighing at least twelve hundred pounds less than the common Trucks. Besides these excellences, by reason of the elasticity of the braces, B, B, B, B, as seen in the drawing, and the other peculiarities of construction, the weight is equalized upon all the wheels, and yet any one may be raised so as to pass any inequality on the rails without lifting either of the other wheels from the track, thus rendering it almost impossible to run a car off. Being bound, and having as it were but four joinings, they are protected from injury by lateral strains, and in case of damage are easily repaired.

These excellences have been fully tested by use, for a long time, on the Eastern, the Fitchburg and Long Island railroads; and for proof of the above stated superiority of these Trucks over all others, we refer to the experience of those who have used and run them.

CAMBRIDGEPORT, April 1, 1845.

DAVENPORT & BRIDGES.